SOUTH MARKETING ISSUE
Pages 9-20

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A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

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U.S. Corn Borer Count Shows Gain In Fall of 1957

Numbers Up in Parts Of Midwest; Spread To South Continues

WASHINGTON — Figures released recently by the U.S. Department of Agriculture indicate that European corn borer numbers last fall were greater for the U.S. than in the previous year. There was a decline in the eastern U.S., however, and a build-up in most north-central states, reversing a trend of recent years. There was some continued spread in southern states.

Representatives of agricultural

(Continued on page 8)

Inorganic Output Dips in November

WASHINGTON — November production of synthetic anhydrous ammonia totaled 310,535 short tons, 4% less than the October output of 322,557 short tons, according to the U.S. Department of Commerce.

Production of ammonium nitrate, original solution (100% NH_4NO_3) in November amounted to 220,748 short tons, down 5% from 231,209 short tons in October. Also down was output of nitric acid (100% HNO_3) from 250,362 short tons in October to 231,100 in November, phosphoric acid (50% H_3PO_4) from 384,834 short tons in October to 356,873 in November, and sulfuric acid (100% H_2SO_4) (gross) from 1,433,050 short tons in October to 1,315,298 in November.

Citrus White Fly Found in California First Time Since 1951

SACRAMENTO—The first California infestation of citrus white fly, a serious plant pest, to occur since 1951 has been found in citrus trees and other plants in the vicinity of Sutter's Fort, a local historical monument.

The pest was discovered in the course of a joint insect survey conducted by A. E. Morrison, Sacramento County agricultural commissioner, and representatives of the Bureau of Entomology, California Department of Agriculture.

The department has been combat-

(Continued on page 4)

Georgia Group Tallies Results of $200 Million Soil Fertility Program

ATHENS, GA.—(Special to Croplife)—An optimistic note ran through the annual meeting of the Georgia Plant Food Educational Society held here Jan. 14-15, in conjunction with the Georgia Section of the American Society of Agronomy.

Fertilizer manufacturers, dealers, salesmen and educational representatives were told that Georgia was one of the few states in the nation showing an increase in fertilizer usage despite a reduction in the acreage of the principal row crops grown in the state. Although acreage of such crops was down around 10%, fertilizer usage went up 1% as farmers increased rates of fertilization on remaining row crops and turned to pastures and feed crops.

Members of the society rededicated themselves to carrying out the $200,000,000 Soil Fertility Program adopted last year, although J. R. Johnson, agronomist and project leader for the University of Georgia Agricultural Extension Service, told the group "we are going beyond the $200,000,000 program in a few years."

Mr. Johnson cited progress made in the past few years, and in 1957, in producing higher yields on fewer acres, referring particularly to the Bale-and-Half Cotton Club, the Ton-per-Acre Peanut Club and the 100 and 1,000 Bushel Corn Clubs as indicative of the yields which can be obtained on Georgia soils, and he declared that Georgia can compete with any state in the nation.

Dr. J. Fielding Reed, secretary-treasurer of the organization and a representative of the American Potash Institute in Atlanta, reported on activities of the society during 1957. Among those, he said, were sponsor-

(Continued on page 24)

White House Backs Lower Price Support Proposals

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON — The White House farm message clearly marked support of the Benson farm program, which, even without new congressional action, will bring lower support levels on non-basic farm commodities. These include oats, grain sorghums, the oilseed crops and others, which may be supported at between 60 and 90% of parity.

It is unlikely that Ezra Taft Benson, secretary of agriculture, will take support levels on these crops down to his now discretionary minimum—a power which he has now without any change in the farm law—but the threat is evident in the President's message to Congress.

The President also asked Congress to extend the provisions of Public Law 480 by providing an additional $1.5 billion this crop year and through fiscal 1959 to finance the disposal of U.S. agricultural purchases. He urged Congress to end the flexible price support adjustment based on supply conditions which, he said, only acted to renew higher levels of price support.

Enlargement of the Commodity Credit Corp. board of directors to seven members was also asked. The board would have the power to advise the secretary of agriculture on the level of price support which he might determine under the discretionary authority which the President is asking Congress to confer on the secretary for the basic commodities.

In the message, President Eisenhower backed his agriculture secretary right up to the hilt.

No Major Changes Seen

As things now shape up, it appears that there will be no major farm legislation in this final session of the 85th Congress. The Republican party has already suffered most of the major losses it can sustain, it is believed, and such other losses in the farm belt may be compensated for through gains in urban communities, which are now said to doubt the reasonableness of federal subsidies to fringe farmers.

President Eisenhower, in his message, urged Congress to end the rigid support and control concept for basic commodities at between 75 and 90%

(Continued on page 25)

Sulfur Production

WASHINGTON—The domestic sulfur industry produced 462,145 long tons of native sulfur and 47,299 tons of recovered sulfur (of a purity of 97% or greater) during October, according to reports of producers to the Bureau of Mines. This compares with production of 529,056 long tons of native sulfur and 40,750 long tons of recovered sulfur in October, 1956. Producers' stock of native sulfur totaled 4,304,891 long tons at the end of October, 1957, compared with 3,705,626 a year earlier.

New Monsanto Unit Now on Stream at Alabama Location

By JAMES W. MILLER
Croplife Staff

ANNISTON, ALA. — Monsanto Chemical Co. unveiled its new Niran and methyl parathion production facilities here Jan. 16 by showing a group of state and federal entomologists and representatives of the trade press how the unit was built in record-breaking time to replace the plant at Nitro, W.Va., destroyed in an explosion last April 16.

The new unit, which was added to an existing Monsanto operation here, is reported to be the largest in the world for manufacture of the two organophosphorus insecticides. The company did not reveal the actual capacity of the plant but said it "considerably exceeds" the former output at Nitro. Its operation increased the personnel requirements at Anniston by 20%.

Actual construction of the new facility was completed six months and 10 days after initial design work began last June. This was about one-half the time usually

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Inside You'll Find

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MEETING MEMOS help you to keep on schedule with meeting plans. Local, state, regional, and national convention dates ..... Page 27

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Nominations Asked for Harvey W. Wiley Award

WASHINGTON — Nominations for the Harvey W. Wiley Award for the development of analytical methods are being asked by the Association of Official Agricultural Chemists. The award was established in 1956 in honor of the late Dr. Wiley.

The annual award of $500 will be given to the scientist or group of scientists who have made outstanding contributions to the development and establishment of methods of analysis of soils, fertilizers, pesticides, plants, feeds, foods, colors, cosmetics or drugs. Nominations must be made prior to April 1 to the secretary of the association, William Horwitz, Box 540, Benjamin Franklin Station, Washington 4, D.C.

To help you sell mixed fertilizers and DIXIE Nitrogen, this ad is appearing in Georgia, Florida, South and North Carolina in these magazines: the February issues of *Farm and Ranch*, *Progressive Farmer* (Carolinas-Virginia), and *The Georgia Farmer*.

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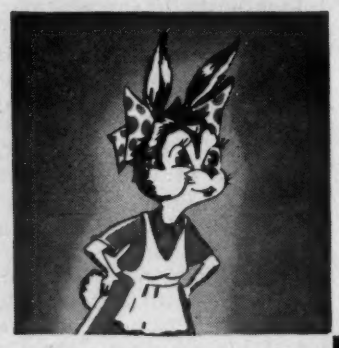

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Officials Hopeful of Mouse Damage Let-Up

SACRAMENTO — Agricultural officials of three northern California mountain counties are hopeful that winter weather during the next two months will be severe enough to reduce the enormous meadow mouse population which has brought financial losses to many growers.

Modoc County has been the hardest hit by the pests. Loring White, agricultural commissioner, estimates losses in the potato fields will run as high as $250,000. The county's $800,000 clover seed crop, planted on about 4,000 acres, may escape with little loss if farmers maintain their poisoning program, Mr. White said.

In Lassen County, Ernest Fix, agricultural commissioner, said a mild winter could result in an extremely serious mouse situation beginning in March or April.

E. B. Bond, Plumas County agricultural commissioner, said the situation in his area had not reached catastrophic proportions but may become a long range problem. He said the potato crop was not involved but that the effect on meadows and pasture likely would be serious.

Meanwhile, field mice infestations in southcentral Washington and central Oregon are just about at an end, says a federal official.

Donald A. Spencer, Denver, biologist with the federal Fish and Wildlife Service, said that in most of the affected areas the mice now number not more than 1,000 to an acre, a 90% decline from a few weeks ago.

There is a four-year cycle of increase in the number of meadow mice but last year the increase zoomed unexpectedly to one of the highest recorded levels in 40 years, Mr. Spencer said.

Just as the increase came swiftly, the fall-off will be marked, Mr. Spencer said. Only mice born this winter will be likely to be around by spring, and the winter kill is about 50%, he said.

N.J. PRODUCTION DOWN

TRENTON, N.J. — The final crop summary for 1957 shows that production of the 35 principal crops grown in New Jersey was down 21% from the year before. The summer-long drouth was the main factor in the decline, according to the New Jersey Crop Reporting Service, although smaller acreages in 1957 also influenced the lower production.

Loy A. Everett

Commercial Solvents Names Sales Executive

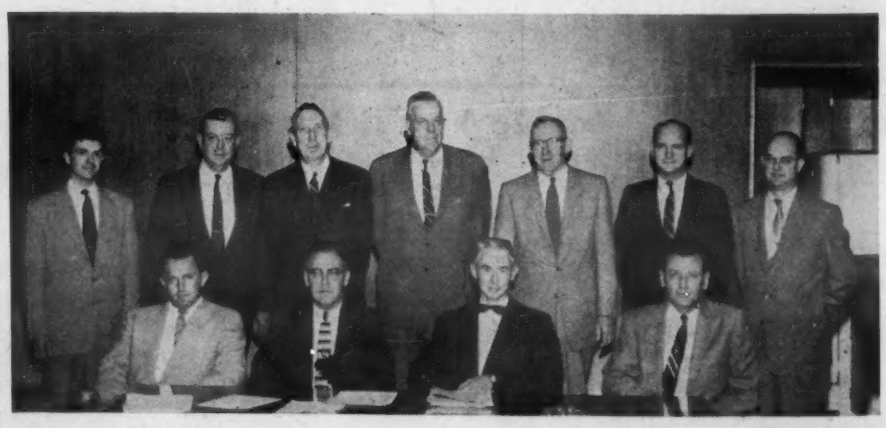
NEW YORK—Loy A. Everett of Albany, Ga., has been named assistant sales manager of Commercial Solvents Corp.'s agricultural chemicals sales department, according to an announcement by Clyde T. Marshall, sales manager of that department. He will make his headquarters at the New York office.

Mr. Everett's responsibilities include the development of marketing programs for the company's production of nitrogen fertilizers and the activation of these programs on a regional basis. His activities will be directed toward the sale of CSC's nitrogen products including Dixsol Nitrogen Solutions and Hi-D ammonium nitrate to fertilizer manufacturers.

Mr. Everett's entire business career has been spent in fertilizer sales work. Prior to joining CSC, he was associated with the Virginia-Carolina Chemical Corp. Mr. Everett attended Georgia Teachers College and the University of Georgia where he received his master of science degree from the university's College of Agriculture in 1942.

COASTAL BERMUDA GROWTH

AUBURN, ALA.—Coastal bermuda in Alabama has grown in the past seven years from a 2,500-acre crop to its present day acreage of 81,000.



FERTILITY BOOSTERS—Shown above are members of the North Carolina Soil Fertility Advisory Committee. In the front row, from left to right, are Dr. S. L. Tisdale, National Plant Food Institute; W. M. Atkinson, Virginia-Carolina Chemical Corp.; Dr. J. F. Reed, American Potash Institute, and A. J. Ham, New Jersey Zinc Co. In the second row are Dr. W. C. White, soil fertility extension specialist, North Carolina State College; T. F. Bridges, Farmers Cotton Oil Co.; L. D. George, Richmond Guano Co.; E. Y. Floyd, Plant Food Institute of North Carolina and Virginia; Dr. S. F. Thornton, Royster Guano Co.; T. H. Wright, Acme Fertilizer Co., and Dr. J. W. Fitts, head, department of soils, North Carolina State College. The committee was formed to advise in the development and coordination of plans for an educational and promotional program designed to give farmers an understanding of the principles of good soil fertility. The committee represents the fertilizer industry, fertilizer materials producers, lime producers serving North Carolina, the North Carolina Farm Bureau, North Carolina Grange and the North Carolina Bankers Assn. The commissioner of agriculture is also a member. He and the director of the extension service designate a representative of agriculture at large. E. Y. Floyd is serving in that capacity. Of immediate concern to the committee is the promotion of meetings for farmers and fertilizer dealers where principles of fertilizer and lime use will be presented. Once meetings are arranged in various counties the committee will work through the fertilizer industry serving the state to encourage dealers to attend.

Survey Results to Be Presented at Midwest Meeting

CHICAGO—More than 700 persons are expected to attend the annual conference of Midwestern agronomists and fertilizer industry representatives scheduled to be held at the Edgewater Beach Hotel here Feb. 13-14. The meeting formerly was sponsored by the old Middlewest Soil Improvement Committee, now the Midwest Regional branch of the National Plant Food Institute, present sponsor.

Summary results of the Institute's study on "Farmers' Attitudes Toward the Use of Fertilizer" are to be a feature of the program. Presentation of the report will be made by Zenas H. Beers, NPFI Midwest regional director, and Dr. M. S. Williams, chief agricultural economist for the Institute. Their report will concentrate on results as they relate to the Middle West. National Analysts, Inc., Philadelphia, conducted the study.

Dr. A. J. Ohlrogge, Purdue University, is chairman of the conference.

Other leading subjects for the session include: 1957 experience with improved implements for proper fertilizer placement; insect control; fertilizer research reports; and effectiveness of dealers' selling methods.

Drs. J. M. Bohlen and G. M. Beal, Iowa State College, will compare the differences in the effectiveness of selling fertilizer as shown by two groups of dealers. Their presentation will show dealers' attitudes toward farmers and farmers' attitudes toward dealers, and will complement the presentation by Mr. Beers and Dr. Williams.

Prior to the conference, agricultural extension agronomists will meet Wednesday with G. P. Walker, Purdue University, presiding. On Tuesday, the North Central Soil Research Committee will meet with R. V. Olson, Kansas State College, presiding.

Room reservation cards have been mailed from Chicago to NPFI's member representatives. Personnel who do not receive cards can make reservations directly with the Edgewater Beach Hotel, indicating they will be attending the conference.

CIL Fertilizer Plants Set Safety Record

MONTREAL — The six fertilizer plants of Canadian Industries, Ltd., located in eastern Canada set a perfect safety record in 1957—the first in the last 10 years—L. V. Clegg, production manager of the company's agricultural chemicals division, announced here. The plants are located at Halifax; Montreal; Beloeil, Que.; Hamilton, Ont.; Chatham, Ont.; and Norwich, Ont.

According to Mr. Clegg, the plants have amassed a total of almost 4,000,000 accident-free manhours. The Halifax plant hasn't had a lost-time accident for the past 14 years while the Chatham plant has been accident-free for more than 10 years. Regular employee strength in all plants is about 225.

IMC Makes Appointment For Southern Sales Post

CHICAGO—International Minerals & Chemical Corp. has announced the appointment of Judson H. Drewry as southern area sales manager for the phosphate minerals division of IMC. The announcement was made by S. T. Keel, division sales manager.

Mr. Drewry has been sales representative for the company's potash division in Shreveport, La., and in his new post, he will direct the sale of phosphate rock in the southern area from offices in the Fulton National Bank Building in Atlanta, Ga.

Study of Kenaf Shows Market Potential in Cuba

NEW YORK—The possibility of a new industry for Cuba has been uncovered in an exhaustive study of kenaf, a substitute for jute which ranks second only to cotton as the world's most valuable commercial fiber.

A 179 page report prepared by Stanford Research Institute of Menlo Park, Cal., for Compania Cubana de Electricidad, an affiliate of the American & Foreign Power System, has been released. The latter company provides 90% of the electrical power distributed in Cuba.

Entitled "Kenaf: A Potential Cuban Industry," the study shows that major problems in the agricultural phase of "kenaf" have been solved and that possible high yields of new disease-resistant strains open important new avenues to capital and industry.

Kenaf is a soft fiber from the stalks of a plant resembling the hollyhock. It is not a new crop, having been mentioned in technical literature as early as 1763. Before its general introduction into the American tropics in 1941, kenaf was grown for fiber in India, Russia, Java, Persia, Reunion, Senegal, Nigeria, Natal and Egypt. Commercial use of the fiber in the Western Hemisphere, however, has been limited.

Cuba has become the center of the world's most advanced research in "kenaf" the study shows, and findings regarding the fiber are promising with respect to local and export market needs.

The physical properties of Cuban kenaf, the report states, make it suitable for nearly all applications where jute is now used, and it can be spun and woven on jute machinery.

Cuba consumes 45,000,000 new bags for sugar and other agricultural products annually, the report shows. If kenaf were used to meet this need, the study states that gross revenue to the industry would amount to between $12,000,000 and $15,000,000 per year. The U.S. is pictured as a potential major market, importing about 750,000,000 lb. jute fiber and jute products annually.

Kansas Conference

MANHATTAN, KANSAS—The second annual Kansas insect and weed control conference will be held at Kansas State College, Manhattan, Feb. 4-5. Chris C. Burkhardt, conference chairman, said latest research will be discussed briefly, insect situations will be reviewed and insect and weed control recommendations will be given. Talks will encourage proper use of pesticides.

MANAGER NAMED

JEFFERSON, ORE.—William Moye, Albany, has taken over duties as manager of the Marion-Linn Seed warehouse here. Prior to assuming his new post, Mr. Moye had served 12 years with the Jenks-White Seed Co. in Albany. He was office manager.

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CITRUS WHITE FLY

(Continued from page 1)

ting the fly for about 30 years in 14 counties, but prior to the Sacramento discovery all known infestations had been eradicated. It was widespread in Sacramento in the 1920's.

Robert Harper, chief of the Bureau of Entomology, said the discovery came at a fortunate time for effective control since spray treatment can be applied before emergence of the insects in early April.

Mr. Harper said the department, in cooperation with Mr. Morrison, will proclaim a citrus white fly control district and will issue a quarantine regulation prohibiting removal from the infested area of all carriers of the pest.

MONTANA DEALER SCHOOL

BOZEMAN, MONT.—The third annual Montana Fertilizer School will be held at Montana State College here on Feb. 11-12, according to an announcement by Dean H. Travis, Jr.

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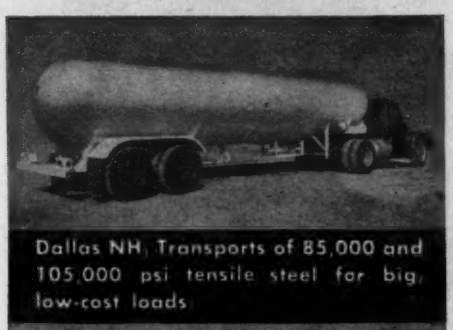

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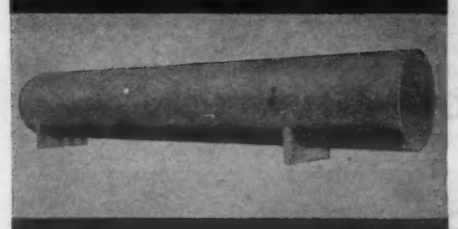

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Olin Mathieson Adds 98% Ethylene Diamine

NEW YORK — Commercial output of 98% ethylene diamine is now underway, the organic chemicals division of Olin Mathieson Chemical Corp. has announced. L. E. Russell, director of marketing, said that the desire for a more concentrated product by many ethylene diamine consumers has resulted in the addition of the 98% material to the Organic Chemicals division line. He said 85-88% and 90-93% of ethylene diamine will still be produced. There will be no change in the availability of polyamines 333 and 910.

Principal users are makers of textile finishing and polyamine resins, synthetic waxes, rubber chemicals, fungicides, pharmaceuticals and chelating agents.

Olin Mathieson's newly organized organic chemicals division will market ethylene diamine and polyamines formerly handled by the industrial chemicals division.

MONSANTO UNIT

(Continued from page 1)

consumed in completing such a project, according to Catalytic Construction Co., Philadelphia, engaged by Monsanto to handle the project.

Decision to relocate the new Monsanto facilities for Niran and methyl parathion at its Anniston plant was based on the much closer proximity both to raw materials and to markets for the insecticides, according to Charles H. Sommers, vice president and general manager of Monsanto's organic chemicals division. Chemically, the new unit is integrated to chlorine and caustic supplies available at its site.

A tour of the new facilities was conducted by Desmond B. Hosmer, plant manager, and Howard Minkler, director of manufacturing, organic chemicals division, St. Louis. In every phase of the operation the new unit is designed to improve upon situations which were believed to have caused the $1 million Nitro explosion resulting in the death of eight employees, Mr. Hosmer said. Multiple instrumentation controls are on each step of the production process and the four reactor vessels are isolated behind 12-inch thick walls of steel-reinforced concrete blocks. The unit also features provisions for automatic kettle dumping and a deluge system which would be triggered by excessive temperature rise.

Many of the ideas concerning safety were incorporated with the assistance of other chemical companies, the Monsanto officials revealed. In turn, Monsanto is making available to the industry in general their own ideas of safety which have been developed in the new plant.

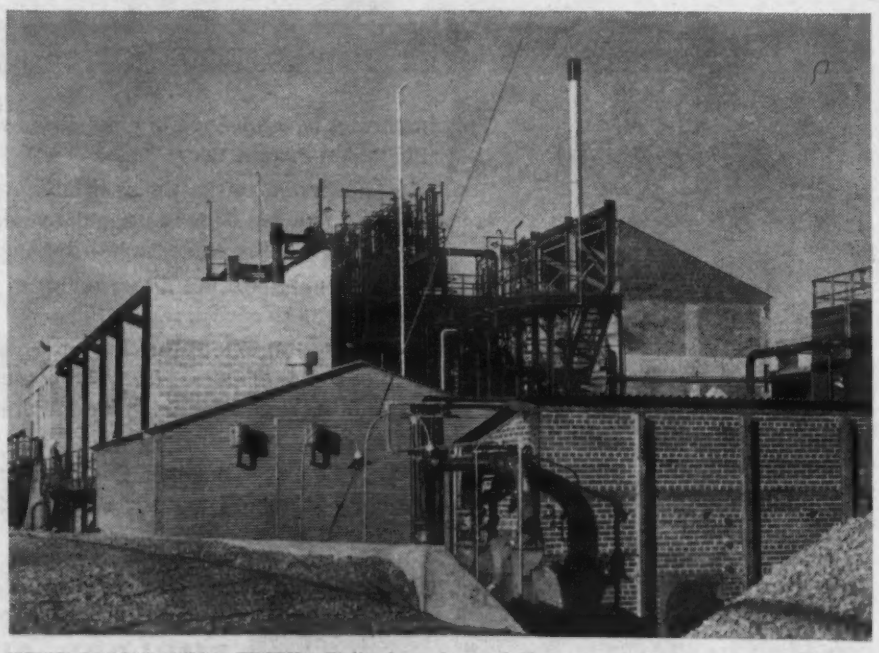
Participating in an orientation discussion on organophosphates as insecticides were Clay Barber, manager of technical agricultural chemical sales, St. Louis; J. Marsh Magner, chief entomologist, organic division development department, St. Louis, and two guest panelists, Dr. C. S. Petty, pathologist, Louisiana State University School of Medicine, New Orleans, and Dr. M. E. Merkl, entomologist, Delta Branch Experiment Station, USDA, Stoneville, Miss.

Mr. Barber explained that since the widest application of methyl parathion is for control of the cotton boll weevil, Monsanto decided to locate its new production facility in the central South. Mr. Magner performed a laboratory experiment on the killing power of organophosphates, chlorinated hydrocarbons and calcium arsenate.

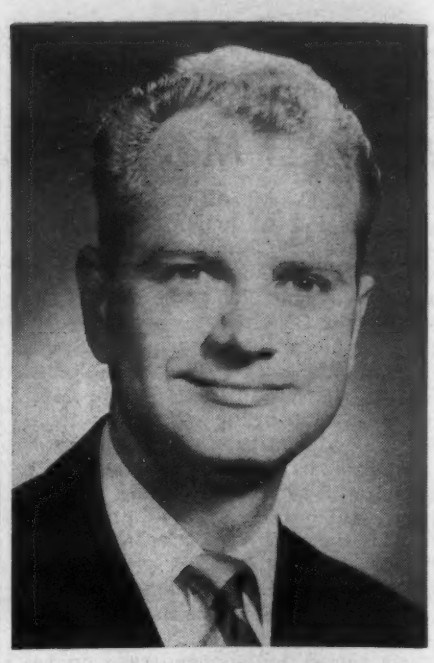
Dr. Merkl pointed out the trends in boll weevil controls by cotton farmers in the Delta and hill country of Mississippi. A farmer considers three questions when he sets up control measures, Dr. Merkl said, (1) what will the insecticide kill?, (2) how much does it cost? and (3) how toxic is the material? Since the serious infestation of 1955 farmers have become more concerned with the speed of kill than with toxicity, he said; hence, a trend to using the more toxic organophosphates. A concerted educational program on safety measures, at the same time, has reduced the instance of fatalities, the Mississippi entomologist reported. Only one fatal spray plane accident was reported in Mississippi in 1957 compared with seven in 1956.

Continuing the question of safety, Dr. Petty discussed a running study of toxicity of organophosphates in Louisiana. The state set up a check system to receive information of any such poison cases. In 1956 seven cases were reported and six in 1957, Dr. Petty said. None of the cases were fatal, but all required hospitalization of a day or more. At least two of the cases were consumers—a housewife and a home gardener, and two were known to be crop dusters. He concluded that this evidence shows a relatively low incidence of organophosphorus poisoning in the state.

Handling arrangements for the opening tour was George K. Johnson, Monsanto public relations official, St. Louis.



NEW MONSANTO UNIT—Exterior view of the new unit for manufacturing methyl parathion built by Monsanto Chemical Co. at Anniston, Ala. From this angle can be seen the isolation compartments for reactors (at left) with foot-thick reinforced concrete walls to protect personnel in case of accident. The low brick building in foreground is part of incinerator for waste products of the unit.



Arthur G. Riddell, Jr.

JOINS BRADLEY & BAKER—Arthur G. Riddell, Jr., has recently joined Bradley & Baker as a fertilizer department sales representative in the middle west. He will cover Illinois, Indiana, Ohio and Wisconsin. Mr. Riddell, who will make his home in St. Louis, was formerly associated with the Bag Division of the Virginia-Carolina Chemical Corp.

Over 300 Expected To Attend Nematode Workshop in Yuma

YUMA, ARIZ.—Thirty agricultural scientists will head up a workshop here Feb. 12-13 on the damage caused in Arizona, California and New Mexico by nematodes, which cost the region's farmers, growers, and nurserymen upwards of 10% of their annual production.

Purpose of the meeting is to give Southwest farmers and growers the latest scientific information on the damage and control of the pests.

More than 300 persons are expected to attend. L. F. Stayner, Pacific Coast district manager of Shell Chemical Corp., sponsor of the meeting, said the group would include county agents and representatives of agricultural chemical companies, in addition to farmers, growers and nurserymen.

This is the fifth Nematology Workshop and the first ever held in the West. The initial workshop was sponsored by Shell Chemical in New York early last year and covered nematode problems in the Northeastern states. Subsequent workshops have been held in St. Louis, Orlando, Fla., and Columbia, S.C.

Panel members include agricultural scientists from the University of Arizona, the University of California, New Mexico College of Agriculture and Mechanical Arts, state departments of agriculture, and the U.S. Department of Agriculture.

At the opening of the meeting, Mr. Stayner will sketch the background and extent of the nematode problem in the Southwest. Dr. M. W. Allen, associate professor of plant nematology at the University of California, will discuss nematodes as a plant parasite. Methods of nematode control will be outlined by Dr. D. J. Raski, chairman of the department of plant nematology at the University of California.

L. C. Glover, entomologist and senior district representative for sales development of Shell Chemical's Agricultural Chemical Sales Division, will serve as chairman of the two-day workshop.

Chairmen of the four sessions are: Dr. J. N. Roney, extension entomologist, University of Arizona; Frank Pritchard, agricultural experimental station, University of Arizona; J. J. Durkin, extension entomologist, New Mexico College of Agriculture and Mechanical Arts; and G. E. Blackwell, Jr., county agent, Yuma.

Zero Tolerance for Methoxychlor in Milk Set by Food and Drug Administration Rule

WASHINGTON — An application for a tolerance of 0.25 part per million of methoxychlor in milk was denied by the Federal Food and Drug Administration in a ruling made Jan. 17. The FDA ruled against the application of the insecticide to dairy cows when the method employed leaves any residues in milk. Tolerance for methoxychlor remains at zero, the FDA announcement said. The ruling was not unexpected, since all preliminary indications had pointed to a negative reply to the application. (Croplife, Jan. 20, page 1.)

Although the action forbids such methods of application that would leave residues in milk, use of methoxychlor is not affected when applied in ways that do not result in such residues. The ruling was printed in the Federal Register of Jan. 17 and became effective immediately, but can be appealed within 30 days. The original petition was made by E. I. duPont de Nemours & Co., Inc., Wilmington, Del.

Because of the unique place of milk in the diet of infants, children, the sick and the aged, FDA had asked the National Academy of Sciences to select an advisory committee of scientists to consider this petition and to make a report and recommendations, as provided by the Miller Amendment. The committee was headed by Dr. Herbert E. Longenecker, vice president of the University of Illinois.

The committee found that the data on safety were "inadequate to justify the establishment of a tolerance" which would permit residues of methoxychlor in milk. Summarizing their position, the committee pointed out the long-standing policy of the FDA and food officials of all states that no poisonous or deleterious substance should be sanctioned in milk. Under the pesticide amendment a finding of safety for a proposed tolerance of necessity requires the establishment of such a tolerance.

The advisory committee recommended that in view of the importance of milk in the diet a greater margin of safety must be established in fixing such a tolerance than would be the case for any other food item in the human diet.

South Carolina Tonnage Down Last Half of 1957

CLEMSON, S.C.—Tonnage figures for the distribution of fertilizer materials in South Carolina were down 4.9% during the final six months of 1957, according to a report just issued by Dr. Bruce D. Cloaninger, director of the state's department of fertilizer inspection and analysis.

The total tonnage for July-December 31, 1957 was 116,874 tons, as compared to 122,929 tons during the same period of the previous year. The only material showing an increase in tonnage was nitrogenous materials, which totaled 22,931 tons for the last half of 1957 as compared to 21,778 tons during the same months of 1956; an increase of 5.3%.

Potassic materials took the greatest loss in the 1957 period, the report indicates. Only 1,686 tons were distributed in the state in the final six months of last year as compared to 2,239 tons the last half of 1956. This was a reduction of 24.7%, the report said.

Monsanto Plant Sets New Safety Record

ST. LOUIS — Monsanto Chemical Co.'s El Dorado, Ark., chemical plant established a new company plant safety record in 1957, and has been named winner among the larger plants of the company of all three safety award categories.

The record, started more than 54 months ago, was 8,014,996 man-hours worked without a major injury to the end of 1957. The previous company record of 5,393,400 man-hours was held by the Nitro, W.Va., plant and ended in May, 1953.

Monsanto's over-all frequency rate during 1957 was 1.41, which compares well with the latest similar rate for the entire chemical industry of 3.38 reported by the National Safety Council.

CLOUD SEEDING

KLAMATH FALLS, ORE.—Cloud seeding to provide an increased snowpack over approximately 1,200 square miles in Klamath and Jackson counties has been arranged again this year by California Oregon Power Co. Silver iodide ground generators will be placed at strategic elevations in the area by North American Weather Consultants of Oregon.

Richard Behrens Heads Southern Weed Conference

MEMPHIS — Dr. Richard Behrens of the Crops Research Division, Agricultural Research Service, U.S. Department of Agriculture, College Station, Texas, was named president of the Southern Weed Conference at a business meeting of the group here Jan. 15. The conference served as host for the annual meeting of the Weed Society of America, Jan. 12-15. (Croplife, page 1, Jan. 20.)

Officers who will serve with Dr. Behrens are V. S. Searcy, agronomist, Alabama Experiment Station, Auburn, vice president, and Dr. Walter K. Porter, plant pathologist, Louisiana State University, Baton Rouge, secretary-treasurer.

Dr. John T. Holstun, agronomist, USDA, Delta Branch Experiment Station, Stoneville, Miss., and E. G. Rodgers, agronomist, University of Florida, Gainesville, were named conference representatives on the executive committee of the Weed Society of America. Named to the executive committee of the conference were Dr. R. E. Frans, agronomist, University of Arkansas, Fayetteville; Leonard Lett, agronomist, National Cotton Council, Memphis, and W. G. Westmoreland, extension weed specialist, North Carolina Agricultural Experiment Station, Raleigh.

The next meeting of the Southern Weed Conference will be held Jan. 21-23, 1959, at the Captain Shreve and Washington hotels in Shreveport, La. The Buena Vista Hotel in Biloxi, Miss., will be the site of the 1960 meeting Jan. 11-12.

At the business session of conference, A. H. Fletcher of the New Jersey State Department of Health, Trenton, reported that considerable interest has been shown in the establishment of a public health section in the conference and indicated that steps are to be taken in this direction.

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PROBLEMS OUTLINED . . .

Right-of-Way Brush Control Requires Broad Research Program and Many Materials

By L. L. Coulter*

The Dow Chemical Co.
Midland, Mich.

Right-of-way brush control research, like the weather, is something that we all discuss but none of us have been able to do much about. In fact, most of us haven't really known what we are trying to accomplish. This paper is a brief outline of some of the problems involved in right-of-way research, some experiences the writer has had and some suggestions for improvement of a situation which, unlike the weather, can be changed.

Right-of-way brush control with herbicides was virtually a new concept in 1945, and as a new concept, very little prior art in research methods had been established. The situation as far as agronomic weed control was, of course, similar, but the greater effort which was put forth by research agencies in this field and well established techniques for evaluating crop response permitted more rapid progress.

In contrast, woody plant research as an art is relatively immature. An "atmosphere of mystery" still prevails in this field, and such a climate has often been exploited improperly. It is, therefore, important to the contractor, user and to the chemical company to give greater consideration to the basic technical aspects of right-of-way brush control, particularly to the research devoted to solve specific problems, to the research behind the products being marketed, and to the evaluation of commercial programs.

In most instances, new chemicals and new formulations are provided to public agencies and industrial research personnel by the chemical industry. Most companies have facilities to give them at least a cursory evaluation before they are forwarded to other groups. This should, of course, be done conscientiously. It is inconsiderate and unfruitful to sample formulations and chemicals indiscriminately to experiment stations or other research agencies on the basis of hunches, theories or "just try it out." The shelves of most industrial organizations are lined with poor hunches and this is part of the price of industrial research. The shelves of public agencies, in contrast, should contain only potentially successful herbicide candidates.

Testing techniques must be applied both in the laboratory and under field conditions. Such tests must reveal the answers to a number of questions concerning a herbicide. All new compounds must be subjected to basic laboratory tests before becoming candidates for right-of-way brush control. Field research dollars cannot justifiably be expended on compounds which have not shown real phytotoxic merit; are too hazardous to use; are uneconomical to produce; or are too difficult to formulate. Laboratory evaluation can be divided into several classes of investigation:

1. Phytotoxicity: Screening tests, using chemicals of unknown phytotoxicity, are ordinarily made on seedling annual crops to determine if the compound is basically herbicidal. Those showing adequate activity are tested further to determine the use spectrum and mode of activity. Laboratory plants and techniques are useful in the evaluation of these points. They also permit accumulation of considerable information regarding the compound, using micro quantities of compounds which are not readily available.

2. Human Toxicity: A low hazard to the user is an important qualification. We have long since evolved from the era when man fought nature with anything at hand and sometimes succumbed himself in the process. The spray crews and the public must be protected.

3. Production: Field research programs built on compounds which cannot be put into the consumer's hands on an economic basis have a shaky foundation and can't hope to be successful. Commercial products must be profitable both to the user and the manufacturer.

4. Formulation: Tests to determine the most feasible formulation from economy, handling, performance and packaging standpoints are an important part of product evaluation. Invert*—a new invert emulsion formulation, is an example of the importance of formulation research. The concept of an invert emulsion was well known; however, an adaptation of this principle to herbicides required some extensive laboratory research. Formulating a material to form an invert emulsion was not difficult, but producing an economical formulation suitable for potential field use and satisfactory from the standpoint of packaging, storage, retention, etc., required considerable laboratory investigation.

The use of a nursery planting of woody plants is helpful for "range finding" work in establishing information on the spectrum of activity, dosages required, techniques of application, timing, and other essential factors for promising herbicides. The nursery permits the testing of a number of species with a very small amount of experimental herbicide.

One of the first axioms of the medical profession is "know the disease, then seek the cure." In woody plant research a similar axiom is true in that it is essential to know the species to be controlled and how it responds to specific compounds. In the nursery it is possible to isolate a given species and establish its response to a certain herbicide. This has been an important contribution of many public research agencies.

The nursery permits selection for uniformity, thus eliminating one of the variables which confront the research man studying woody plant control in nature. We have found that, even though we are able to select plants with similar morphology and exact cultural history, a minimum of 10 plants is required for reproducible results. This being true in the nursery, it is easy to visualize the futility of working with small numbers of plants on the right-of-way where natural variables are extremely significant and numerous. Several years ago, the writer established a latin square, with six replicates one-hundredth acre in size, on a right-of-way uniformly populated with oak. In spite of all precautions, the variation in control within treatments varied as much as 45%.

In general, the critical dosages are somewhat lower on two and three year old nursery seedlings than on stump sprouts on the right-of-way. For example, the use of 12 to 16 lb. acid equivalent of 2,4,5-T, 2,4-D or silvex per 100 gal. required for satisfactory control with basal treatment of some right-of-way species might be reduced 50% on nursery trees. A further advantage of the nursery is the relative freedom from hazards, such as fire, insects, bulldozers, blasting, erosion and cutting. The nursery permits the treating of vegetation close to headquarters, thus reducing travel time, and by its convenience encourages a more diligent effort in follow-up observations.

A recent experiment to explore the importance of leaves in herbicidal action is an example of the type of use for which a nursery is ideally suited. The experiment was conducted on white ash (Fraxinus americana) and red osier dogwood (Cornus stolonifera) using 10 uniform plants per treatment. Esteron 245 O.S. was applied with a knapsack sprayer at a concentration of 4 lb. ahg. in several ways as outlined in Table 1. The principal introduced variable was stripping leaves from some plants prior to spraying while others were left intact. The results demonstrate the importance of testing more than one species. Ash failed to respond when no leaves were present while dogwood responded very well. It further points out that the type of application is important as a variable since all dogwood plants were killed when the entire plant was sprayed, while most of them sprouted from the root collar when only the tops were sprayed.

There are, of course, some problems associated with the development and use of a woody plant nursery. The primary one is that of maintenance, since weed control, ironically enough, is a real problem. This can be overcome through the use of methyl bromide for fumigation of weeds and weed seeds prior to establishment. The timing of planting is very critical and, if delayed, a high mortality may result.

Testing on the right-of-way is essential for final proof of performance. The sites should be chosen carefully, using as extensive an area as the supply of chemical and application facilities permit. Application should be made uniformly and in a similar manner to that which will ultimately be recommended for the product. Research workers are on occasion criticized for making applications superior to those commonly made commercially. However, it is impossible to evaluate research work which has not been applied properly. Right-of-way evaluation is, of course, a further responsibility of the chemical company which must be assumed prior to putting a new product on the market.

The minimum size for a right-of-way test plot has not been well established. In most instances, it should involve at least 100 gal. spray mixture. It is possibly even more essential to have plots located in as many areas as possible to get an adequate evaluation.

It is seldom practical to evaluate combinations of herbicides in this type of a treatment before the specific value of the individual compounds have been established. As far as research is concerned, the "brush killer or mixture" philosophy has done much to retard the progress of good research, since it has diverted effort away from the primary target of establishing response of species to individual compounds and has attracted research time and effort to the evaluation of mixtures whose individual component activity is not known.

The evaluation of results is an item of major importance to the user and to the scientist. Ordinarily, a primary point to note is the nature of action of the herbicide, including speed and

(Continued on page 22)

Table 1
Response of Ash and Dogwood Nursery Stock to Several Herbicidal Treatments

Carrier*	Leaves	Application	Response Index*** Dogwood	Ash
1. Water + oil	Clipped**	Top only	4.0	1.0
2. Water + oil	Not clipped	"	4.5	4.8
3. Water	Clipped	"	4.2	1.3
4. Water	Not clipped	"	4.9	5.0
5. Water + oil	Clipped	Entire plant	5.0	1.4
6. Water + oil	Not clipped	"	5.0	5.0
7. Water	Clipped	"	5.0	1.0
8. Water	Not clipped	"	5.0	5.0

Rating system: 1.0=No effect.
2.0=Partial top-kill.
3.0=More than 50% of top-kill.
4.0=Top-kill with root collar sprouting.
5.0=Dead.

*All sprays contained 4 lb. ahg., 2,4,5-T as Esteron 245 O. S.
**Entire leaf including petiole clipped off immediately before spraying.
***Readings taken 12 months after treatment.

*Paper presented at Northeastern Weed Control Conference, New York, Jan. 9, 1958.

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CORN BORER COUNT

(Continued from page 1)

agencies in 24 states counted borer-infested corn stalks and tore apart plants in sample fields to estimate how many live borers were on hand to spawn 1958's crop of these corn pests.

For the entire U.S., based on comparable districts surveyed, the average number of borers per 100 corn plants rose from 112 in the fall of 1956 to 170 in 1957. In 1956, the borer cost the nation's farmers about $119.5 million in losses of corn grown for grain. Estimates of last year's damage are not yet available.

The borer continued to spread to the south in 1957, particularly in Arkansas, Alabama, Mississippi and Louisiana. Most notable spread involved seven northeast parishes of Louisiana. Although the pest was reported in this state in 1948, surveys failed to turn up additional borers until 1957.

In several northcentral states the corn borer staged a dramatic increase from an average of 102 borers per 100 stalks in 1956 to 178 in 1957. Iowa, with 419 borers per 100 plants, Missouri (410), and South Dakota (363) showed heaviest infestations of the pest. However, populations declined in Illinois, Indiana, Michigan and Ohio.

Borer numbers dropped drastically in the eastern U.S. except for several counties in Rhode Island and Suffolk County, N.Y., where damaging populations were still present. The average for the eastern states fell from 186 borers per hundred stalks in 1956 to 104 in 1957.

Damage to 1958 corn crops will depend much on the weather's effect on the insect's survival and development, USDA points out.

This major pest of corn, a native of Europe, was first noted in the U.S. near Boston in 1917. Since then it has spread west, north, and south into 38 states—from Maine to Colorado and from Montana to Georgia.

James R. Ford Heads Del-Mar-Va Group

SALISBURY, MD.—James R. Ford, Warner W. Price Co., Smyrna, Del., has been elected president of the Del-Mar-Va Peninsula Fertilizer Assn.

BEET PULP BURNS

WINNIPEG—More than 2,000 tons of dried sugar beet pulp, valued at $40 a ton, went up in smoke on the outskirts of metropolitan Winnipeg when fire of unknown origin destroyed a huge Manitoba Sugar plant warehouse recently. The loss was reported covered by insurance.

B. Gene Carter

JOINS VELSICOL—B. Gene Carter has been added to the staff of Velsicol Chemical Corp. as a technical sales representative, according to an announcement by Roger W. Roth, agricultural chemicals division sales manager. Mr. Carter will work in the midwestern states. A graduate of Texas A&M College with a degree in entomology, Mr. Carter will be responsible for sales of Velsicol's insecticides and solvents in Ohio, Kentucky, Michigan, West Virginia, and the western portions of Pennsylvania and New York. He makes his headquarters in Columbus, Ohio. Pesticide products made by Velsicol include technical endrin, chlordane, heptachlor, parathion and methyl parathion.

Pesticide Hearings Set in California

SACRAMENTO — The California Department of Agriculture has scheduled public hearings in Los Angeles Jan. 28 and in Sacramento Jan. 30 to consider proposed changes in its regulations governing use of injurious pesticides and injurious materials in California.

Robert Z. Rollins, chief of the department's Bureau of Chemistry, said the proposed changes would include Thimet, a new organic phosphorus insecticide, among the pesticides which may be used only under permit from a county agricultural commissioner. It is also proposed to exempt from permit requirement cord treated with parathion and sold for control of flies.

The proposed changes in the regulations concerning 2,4-D and other injurious herbicides would exempt two newly developed products from the requirement of a permit. Mr. Rollins described one of these as a wax block inpregnated with 2,4-D and which is dragged over a lawn to apply the selective weedkiller to the broad-leaf weeds. He said the other product is a plastic sprayer-container holding a quart of ready-to-use solution of 2,4-D.

The hearings, at which Mr. Rollins will preside as hearing officer, also will consider proposed changes in regulations governing use of injurious herbicides in Kern, Kings and Tulare counties. Present regulations prohibit use of these chemicals between March 15 and Oct. 15 within two miles of any cultivated commercial vineyard or cotton planting belonging to any other person unless there is a continuous air flow away from those plantings or within one half mile of any such planting regardless of the direction of air flow.

The proposed changes would permit application up to one half mile instead of two miles as now specified, and one hundred feet instead of one half mile as now specified in these counties.

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Texas Fertilizer Dealers Told Success Lies in Providing Product Information

COLLEGE STATION, TEXAS—"Chemicals alone are not enough; the successful dealer must offer the farmer sound information along with his product," Texas fertilizer dealers were told recently at Texas A&M College.

W. O. Trogdon, Olin Mathieson Chemical Corp., Houston, speaking on "Reaching the Farmer for Repeat Sales" before 130 participants in the Texas Fertilizer Conference, said, "The dealer who only sells a product, without providing advice and a follow-up program is not a legitimate dealer."

Small farm units are not sound sale prospects, in spite of their large numbers, Mr. Trogdon said. To illustrate his point, he said that small farms make up 40% of the nation's total farms—yet market only 3½% of the farm production.

"The dealer should keep individual records on farmers to be sure the farmer uses the product properly. One dealer I know even sees to it that the farmer leaves an unfertilized check strip; then he takes yield figures and computes the profit made by fertilization.

"This is all on paper, where the farmer gets a copy. With this information, in this form, the dealer can go to the banker with something to say and something to show.

"One dealer I know of, in one day, sat down with a customer and helped him analyze results of a soil test; as a result, in that one day, from that one customer, he got a firm commitment for 546 tons of fertilizer.

"Analysis helps in case of poor results, too. One man I know, who had planted 500 acres of cotton, side-dressed it six inches to each side and four inches deep when the cotton was in the heavy bloom stage. The cotton shed a half-bale per acre, and the farmer said: 'I'll never side-dress again as long as I raise cotton.' A careful analysis of these poor results, with the farmer participating, showed that it wasn't the side-dressing but the method which caused the loss. Now he says he'll side-dress this year's crop—but he'll do it right this time."

The dealer must know his community's values and aspirations, too, Mr. Trogdon said. "One community may place a high value on having the land free of debt. It's up to the fertilizer dealer to show the farmer how fertilization will help him free his land of debt.

"Another community might not be bothered about debt, but might place a high value on material conveniences. Then the dealer must show the farmer how fertilizer will help him obtain these things.

"Farmers are more imitative than creative. Establish demonstrations and show him; if his neighbor is doing a good job, get him into your car to go and see what that neighbor is doing.

"There are still too many dealers who sell on the basis of price alone. They need to establish a basis of operation where the farmer comes to the dealer for his advice; then price will no longer be a primary factor.

"But the dealer needs to know what he's talking about, too. I recently had a dealer ask me where he could buy some of 'that 60-60-40 fertilizer.' Another one asked me where he could get some 'side-dressing nitrogen—who sells that kind?' "

Dealers within the industry aren't the only ones who need some educational work, according to information brought out during the conference. Raoul Allstetter and R. L. Beacher of the National Plant Food Institute presented some preliminary views of the recent survey conducted by the Institute dealing with fertilizer use and understanding. These results are preliminary, and the full report will be available soon.

Dr. Virgil Lee, former president of the Production Credit Corp. in Houston, the banquet speaker, offered the group a challenge. "It appears that a 100% increase of fertilizer being used in Texas would not be over-fertilizing," he said, and challenged the group to cause this increase—in considerably less time than it took to attain present usage.

An important part of the program was the presentation of good management programs for cotton and corn. Discussing these various subjects were:

"Cotton Production and Varieties," G. A. Niles, agronomy department; "Cotton Fertility," A. G. Caldwell, agronomy; "Cotton Insect Control," F. C. Garner, entomology; "Defoliation," W. C. Hall, plant physiology and pathology, and "Harvesting," L. H. Wilkes, agricultural engineering.

For corn production, speakers were: "Corn Production and Varieties," Ben Spears, agronomy; and "Corn Fertility," F. L. Fisher, agronomy.

Dr. R. D. Lewis, director of the Texas Agricultural Experiment Station, opened the conference with a discussion, "Understanding Modern

(Continued on page 18)

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

Most children will readily agree that daily tooth brushing is necessary from the standpoint of health, hygiene and general appearance. After all, they've heard it often enough from people who are supposed to know—their parents, dentists, teachers and others.

Harry Ransdell of the Nitrogen Division, Allied Chemical & Dye Corp., uses this example well in an article showing how necessary it is for fertilizer dealers to keep repeating to their customers the need for fertilizing.

Farmers—like many children—don't always stay sold on the idea of practicing a good thing regularly without constant urging. Parents have to sell the tooth-brushing idea to children over and over, day after day. Dealers, likewise, need to sell the fertilizer idea to their customers and prospects year after year.

A picture of Mr. Ransdell's boy accompanying this article serves to illustrate the point. Chances are that this youngster is quite accustomed by now to the admonition, "Be sure to brush your teeth now."

Many of us are like children in some respects. Take this matter of applying fertilizer. Mr. Ransdell says: "Most farmers will agree that it pays to use adequate amounts of fertilizer every year. Yet every year the U.S. Department of Agriculture, the state agricultural colleges and other qualified agencies report that only a fraction of the fertilizer needed in every area of the country is actually applied. Every year, regardless of weather conditions, healthy, profit-making crops alternate along the nation's highways with others suffering from plant food deficiencies—crops put out by farmers who were never sufficiently sold on the idea of using adequate amounts of fertilizer.

Reminders are necessary . . .

"Take, for example, the corn fields of two farmers I know. One field made the owner a substantial profit for the time and money he spent on it. The owner of the other field lost heavily on his investment. Yet the fields are within a mile of each other. The soil is identical. Both fields suffered the same amount of damage from early summer floods.

"But the owner of the first field spent a few extra dollars an acre for fertilizer. He plowed down ample amounts of nitrogen, phosphorus and potash. He put starter fertilizer in the rows when he planted the corn. After the flood damage, he side-dressed with nitrogen solution. This not only offset damage from the water but made plenty of nitrogen

(Continued on page 18)

Fertilization Boosts Florida Feed Supply

GAINESVILLE, FLA. — A statewide improvement in the over-all supply of feed for the winter is due to an intensive fertilization program and better management of pastures, J. R. Henderson, Florida extension agronomist, declared at a meeting to study the 1958 crops and feed situation.

He said that last year Florida farmers used more mixed fertilizer per acre than was used in any other state, and as a result Florida has more than 1.6 million acres of improved pasture "with continued expansion in prospect."

Mr. Henderson indicated increases will occur in the use of oats, rye and wheat, grown alone or in combination with winter legumes, for both winter grazing and for chopped green forage.

The supply of hay is expected to be larger than in 1957 due to favorable soil moisture conditions in some of the major hay-producing areas.

"More winter pasture and temporary summer grazing crops are being used," he said, "and there has been a considerable increase in the number of acres under irrigation. There have been decided increases in the preservation of forage crops as silage and a slight increase in the production of tame hays."

The supply of dried citrus pulp, he said, is expected to equal or exceed that of the past canning season, and there is a trend among dairies to move onto soils better suited for the production of pasture and hay.

Robeson County Leads In Mixed Fertilizer Use

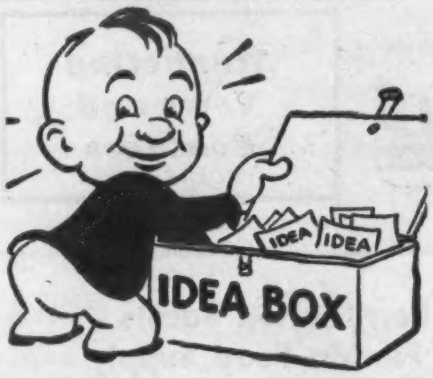
LUMBERTON, N. C. — Robeson County farmers used more mixed fertilizers last year than any other North Carolina farmers, according to Dr. W. C. White, North Carolina extension agronomist.

In his report, Dr. White said Robeson County farmers used 50,063 tons of mixed fertilizers from July 1, 1956, through June 30, 1957, which is 4.4% of the state's total tonnage. Other counties, in order of sales, were Pitt, Johnston, Wayne and Columbus.

The sales leader in Robeson County was 3-9-9, with 3-9-6 next in line. Dr. White pointed out that 3-9-9 was used for tobacco and general crops, while the 3-9-6 was sold only for tobacco.

Dr. White added the 3-9-6 will not be manufactured in 1958 nor will the field crop grades of 3-9-9, but it will be available for tobacco.

"I could hire you, but unfortunately, my wife has an interest in the business."



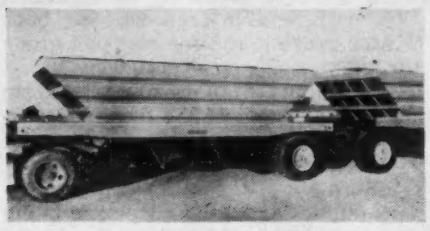
What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 5929—Combination Tank, Flatbed

The Fruehauf Trailer Co. is producing a combination tank and flatbed unit suitable for hauling bulk grain, rice, etc., in the tank. For hauling other products, the tank can



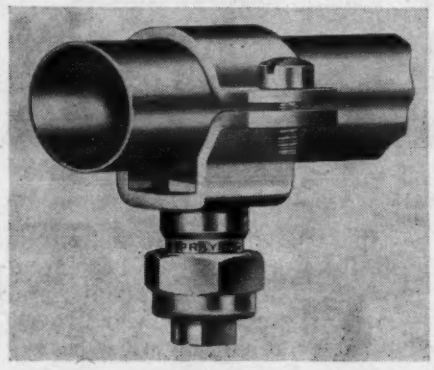
be lifted out and the floor can be reinstalled, making the trailer a flatbed. Hopper-type units are illustrated. The company's semi-trailers are 23 ft. long and the 4-wheelers are 21 ft. long. Secure details by checking No. 5929 on the coupon and mailing it to this publication. Please print or type name and address.

No. 6681—Valves

A free 6-page bulletin (J-160) provides information on "OPW-Jordan Sliding Gate Pressure Reducing Valves" manufactured by the Jordan Industrial Sales Division of OPW Corp. The bulletin describes valve features, design changes and method of operation with corrosive and non-corrosive liquids. It contains flow capacity charts, dimensional drawings, control ranges and material specifications. Check No. 6681 on the coupon and mail it to secure the bulletin. Please print or type name and address.

No. 6680—Spray Nozzles

A newly designed group of split-eyelet spray nozzles and connectors for mounting to spray booms has been announced by the Spraying Systems Co. Company officials state that cadmium plated heavy steel that will not bend or break is used for the clamp for strength. Brass, aluminum or stainless steel are used for the parts that touch chemicals. The split-eyelet units are supplied as "No. 7421 TeeJet Split-Eyelet Spray Nozzles" and as "No. 7521 TeeJet Split-Eyelet Connectors." Sizes are offered to fit all standard spray boom piping and tubing, states the manufacturer. A wide range of interchangeable orifice tips may be used with the nozzles. Shown is the No. 7421 nozzle with flat spray tip. Secure details by checking No. 6680 on the coupon and mailing it to Croplife. Please print name and address.



Also Available

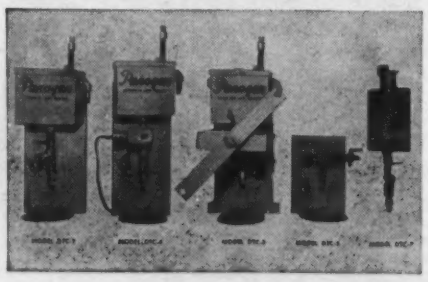
The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6678—Brush Control Booklet

Weeds and brush along power and telephone lines, railroad right-of-ways, pipelines, public highways and on industrial sites such as tank farms can be cleared chemically at a cost averaging one-third below that of hand or mechanical cutting, claims a booklet on the subject published by the Monsanto Chemical Co. The 24-page booklet states that various formulations of 2,4-D and 2,4,5-T and mixtures of these chemicals now make possible year-round programs of foliage, basal and stump spraying for maximum weed and brush control at substantial long-term savings of time and money. A feature of the new booklet is a chart which lists more than 50 common woody plants controllable with 2,4-D, 2,4,5-T and combinations of these chemicals and the recommended rates of foliage spray for each. Secure the booklet by checking No. 6678 on the coupon and mailing it to Croplife. Please print or type name and address.

No. 5927—Conversion Kits

The Panogen Co. has announced a series of five "dust-to-Panogen" conversion kits. With the help of one of these kits, the owner of a dust treater, grain-loading auger, or any other system which adequately mixes seed, may use liquid Panogen seed treatment and do so inexpensively, company officials claim. Various kit models are designed for gravity feed from elevated containers, for use where the container of liquid is in high locations and for use where the liquid is circulated via a pump. Further information may be obtained by checking No. 5927 on the coupon and mailing it to this publication. Please print or type the name and address.



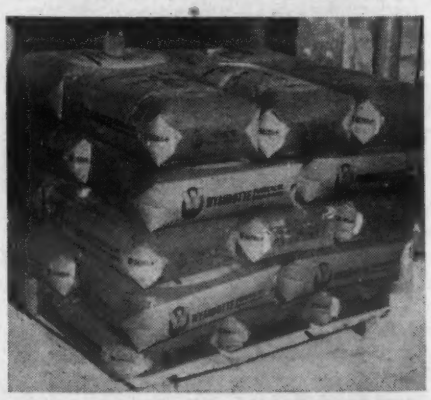
No. 5923—Bulk Scale

The newest addition to the materials-handling line of the Burrows Equipment Co. is a 1,000-lb. model 1200 bulk scale. Company officials said the "heavy-duty scale features

a built-in Fairbanks-Morse scale to weigh any lot of material down to the ounce, accurately and quickly, as it is handled." The unit is 38 in. high and 30 in. wide, and has a hopper 40 in. in length. All controls—two-wheel foot-brake, scale, dump handle and pushing handle—are located at the rear, within easy reach of the operator. Standard equipment includes 10 in. rubber wheels at the front and 6 in. roller bearing swivel casters at the rear. Details may be secured by checking No. 5923 on the coupon and mailing it to this publication.

No. 5911—Multiwall Paper Bag

A new type of multiwall paper bag having as its main feature a pasted valve reducing insert that permits standardization of pallet patterns regardless of the density of the packaged product has been developed by the Multiwall Bag Division of the Owens-Illinois Glass Co. in coopera-



tion with the Wyandotte Chemicals Corp. The bag is said to further lend itself more readily to high-stacking. The valve reducing insert makes it possible for the company to make a bag of standard length and width—but with a thickness when filled that may range anywhere from 3½ in. up to 6½ in. The new bag is three-ply and uses two 40 basis weight sheets and one 50 basis weight sheet of natural Kraft paper. Secure details by checking No. 5911 on the coupon and mailing it to this publication. Please print or type name and address.

No. 6674—Bag Packer

The Chase Bag Co. is distributing a new bagging unit for the fertilizer industry. It is called the "Southland Packer" and it is described as a completely automatic, all-electric device for filling and weighing open mouth

Send me information on the items marked:

☐ No. 5911—Bag	☐ No. 6676—Mixer-Spreader
☐ No. 5923—Bulk Scale	☐ No. 6677—Pumps
☐ No. 5927—Conversion Kits	☐ No. 6678—Brush Control
☐ No. 5929—Tank, Flatbed	☐ No. 6679—Bagger
☐ No. 6674—Bag Packer	☐ No. 6680—Nozzles
☐ No. 6675—Valve	☐ No. 6681—Valves

(PLEASE PRINT OR TYPE)

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS PERMIT No. 2
(Sec. 34.9, P. L. & R.)
MINNEAPOLIS, MINN.

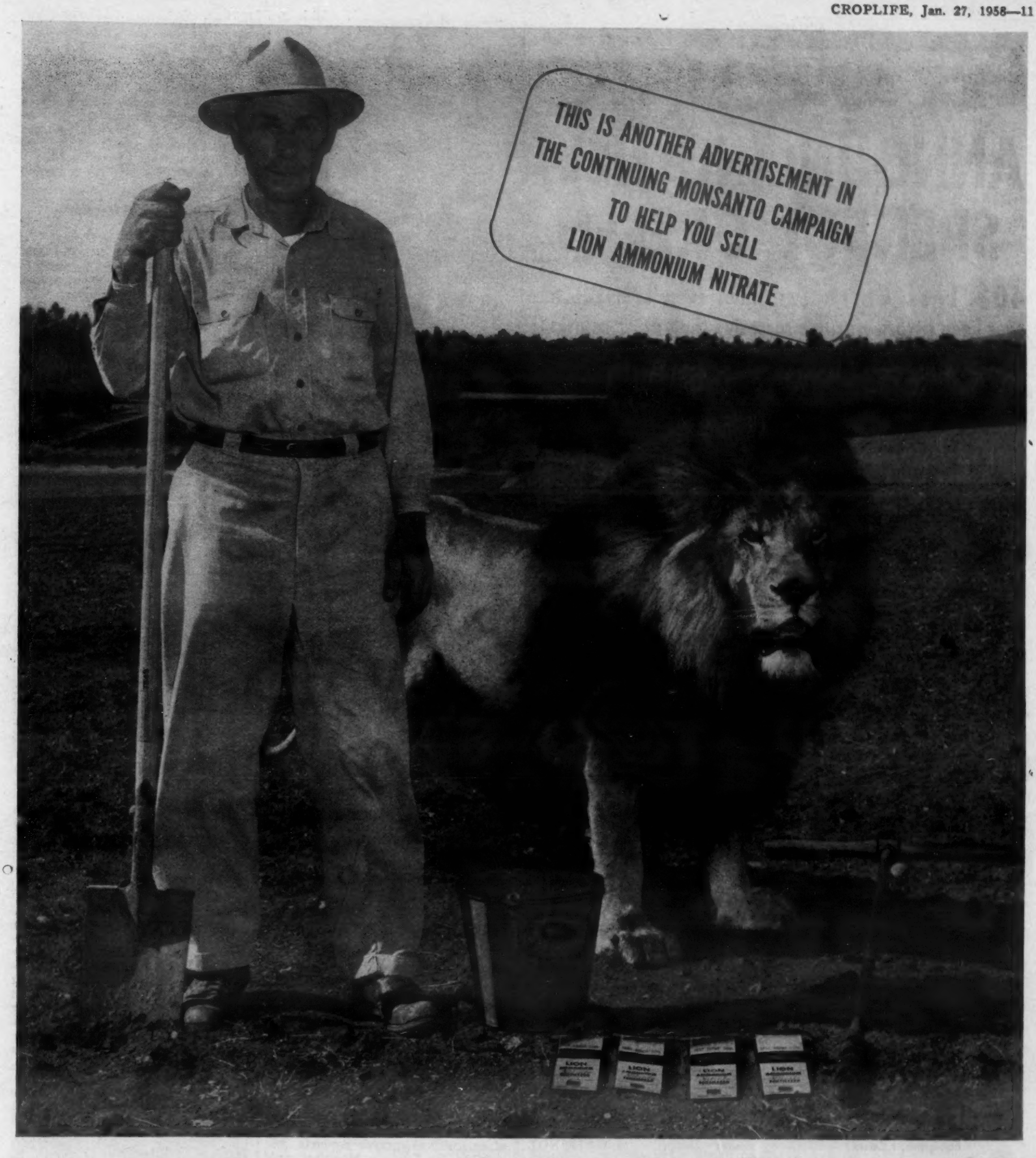
BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67

Reader Service Dept. Minneapolis 1, Minn.



Your crops need all the nitrogen a soil test indicates...

USE LION BRAND AMMONIUM NITRATE

Nitrogen is the growth nutrient that builds big, healthy productive plants. And Lion Brand Ammonium Nitrate fertilizer, containing 33.5% nitrogen, supplies *two* important kinds of plant nitrogen . . . quick-acting and long-lasting . . . to give your plants a fast start *and* maintain steady growth.

Test your soil to learn how much nitrogen and other plant foods you need for your crops. Then figure how much and what kind of fertilizer is necessary to supply these needs. Your local agricultural advisors will help you.

Apply the full amount of proper mixed fertilizer and Lion brand Ammonium Nitrate your soil test indicates. Don't skimp—fertilizer is the least-expensive item you use for crop production.

See the results when your crops get all the nitrogen they need for peak yields. You'll be glad you used low-cost, Lion brand 33.5% nitrogen fertilizer. Look for the Lion on the bag at your favorite fertilizer dealer.

This year Lion brand is better than ever . . . more uniform in size . . . can't cake when stored properly. Look for it in the NEW GREEN BAG.

Monsanto

MONSANTO CHEMICAL COMPANY • Inorganic Chemicals Division • St. Louis 24, Missouri

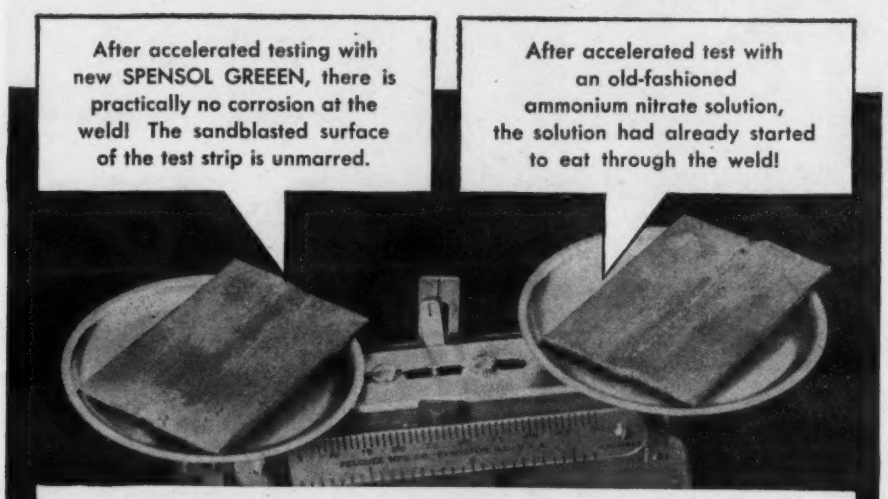
Advertisement

An Important Announcement to Fertilizer Manufacturers:

After 12 Years of Secret Research
Spencer Chemical Company Takes Pride In . . .

ANNOUNCING NEW SPENSOL® GREEEN™

40% Less Corrosive than even SPENSOL has ever been before—far less corrosive than other solutions


After accelerated testing with new SPENSOL GREEEN, there is practically no corrosion at the weld! The sandblasted surface of the test strip is unmarred.
After accelerated test with an old-fashioned ammonium nitrate solution, the solution had already started to eat through the weld!

The scales show the difference in corrosion damage. The metal panel on the right was immersed in an ammoniating solution containing the best inhibitor on the market up to this time. The panel on the left was immersed in SPENSOL GREEEN. Both panels were sandblasted first to remove mill scale and expose parent metal. Both were tested for the same length of time. But SPENSOL GREEEN is so much less corrosive that the panel on the right lost more than one and a half times as much weight as the SPENSOL GREEEN panel.

Spencer Technical Director Ralph Miller reveals . . .

How New SPENSOL GREEEN Can Double The Life of Storage Tanks, Sparger and Distribution System:

Ralph Miller

NOW, for the same price you have been paying for any leading brand of ammoniating solution, you can have an ammonium nitrate solution that can cut your equipment replacement costs in half and eliminate most of the down-time caused by corrosion!

The ammonium nitrate solution is Spencer Chemical Company's new SPENSOL GREEEN. New SPENSOL GREEEN contains a special inhibitor that is at least 40% more effective* than other corrosion inhibitors now being used! This means that new SPENSOL GREEEN can greatly reduce corrosion problems.

Think of The Savings in Equipment Costs

No need to replace carbon steel storage tanks every three to five years! Carbon steel storage tanks, sparger, pipe lines, fittings, etc., last nearly *twice* as long when new SPENSOL GREEEN is your ammonium nitrate solution!

Think of The Savings in Reduced Down-Time

When you use SPENSOL GREEEN, you take an important step toward ending production hold-ups caused by corroded lines in the distributing system!

As you know, delays and down-time can be mighty costly this time of year with the busy season at hand. But with SPENSOL GREEEN, you have *extra* assurance of keeping production at the top level of efficiency!

No Changes in Your Mixing Process

You use SPENSOL GREEEN the same way you would use any ordinary ammonium nitrate solution. SPENSOL GREEEN can be added to the ammoniator, whether your plant is set up for continuous production or a batch process operation!

Since the basic specifications and mixing properties of SPENSOL GREEEN have not been changed, the handling, measuring and metering are the same as they were with SPENSOL before SPENSOL GREEEN was developed!

Will Not Change Color of Your Fertilizer

Although SPENSOL GREEEN is a definite green color, it will not change the color of your finished product.

Available in all SPENSOL grades, SPENSOL GREEEN comes to you at no increase in price!

Why Settle for Less Than New SPENSOL GREEEN?

So why buy ammonium nitrate solutions that give you less corrosion control, when new SPENSOL GREEEN costs you no more?

Switch to SPENSOL GREEEN and see the difference in increased life of equipment, *plus* big reductions in down-time!

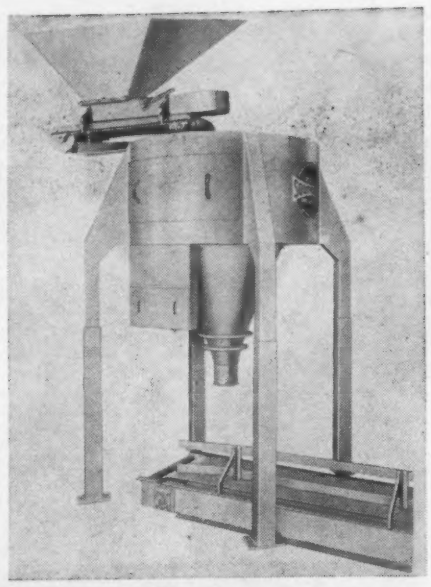
For more information, write, wire or phone Spencer Chemical Company, Dwight Bldg., Kansas City 5, Mo.

*As measured by the comparative weight loss of 2" x 3" mild steel test plates, each containing a weld bead. There is no standard test for corrosion, but this method gives accurate, reproducible results.

INSIST ON SPENSOL GREEEN
(SPENCER NITROGEN SOLUTIONS)

SPENCER

America's Growing Name in Chemicals



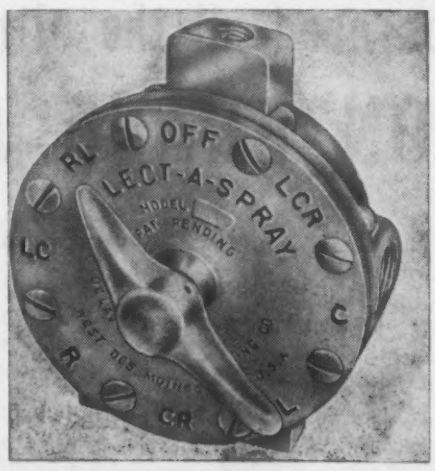
textile or multiwall paper bags. It is manufactured by the Chattanooga Boiler & Tank Co. and is distributed exclusively by Chase. It is claimed that the unit will handle 50-, 80- and 100-lb. multiwall paper bags at 25 bags per minute as a typical working speed. Sustained high accuracy of weights over an extended run is guaranteed. Fertilizer and any other granular or free flowing material can be packed. Chase officials state: "Minimum change-over time from one analysis to another is an outstanding feature." Cylindrical hoppers and buckets allow a clean and complete flow of material. Simplicity of design reduces maintenance costs and problems. Parts are standardized and can easily be interchanged in plants where more than one packer is in use. No air or hydraulic fittings are used. The packer is made from 12 gauge or heavier steel plate and requires no external bracing for rigidity. The feeder is of the continuous operating type, using a ½ h.p. gear-enclosed motor to operate its endless belt, over 8 in. self-cleaning pulleys. Check No. 6674 and print the necessary information on the coupon and mail it to Croplife to secure details.

No. 6679—Fertilizer Bagger

A four-page bulletin describing the new Bemis Rapid-Weigh bagger for fertilizers is now available. The bulletin contains performance and engineering data on the bagger, which fills bags with pelleted, granular and meal type fertilizers at speeds up to 24-100 lb. bags per minute. Weight tolerances average plus or minus 2 oz., according to the manufacturer, the Bemis Bro. Bag Co. Secure the bulletin by checking No. 6679 on the coupon and mailing it to Croplife. Please print name and address.

No. 6675—Boom Control Valve

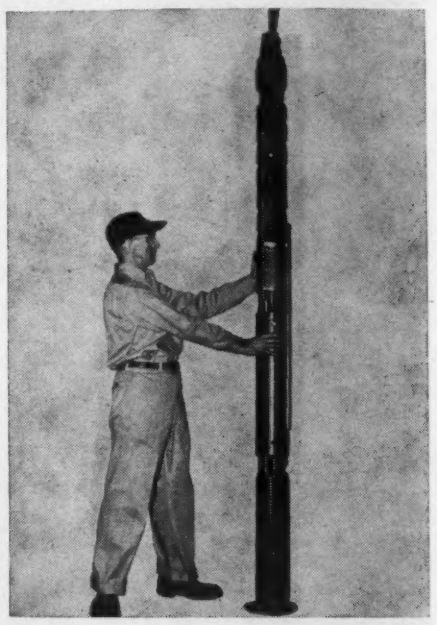
A new series of boom control valves has been added to the Delavan line of agricultural sprayer products, announces the Delavan Manufacturing



Co. The valve will be called the 5600 series. The valve incorporates the features available in the 2800 series plus a ⅜ in. accessory or hand gun outlet. The 5600 series is available with ¼ in., ⅜ in., ½ in., and ¾ in. inlet and bypass openings. The available outlet sizes are ⅜ in. and ¼ in. Each valve is provided with a ¼ in. gauge outlet. It is constructed of die-cast aluminum and stainless steel. Internal seals of the 5600 valve are a combination of stainless steel and a plastic material resistant to the corrosive effects of agricultural chemicals, it is claimed. Check No. 6675 on the coupon and mail it to Croplife to secure details. Please print name and address.

No. 6677—Submersible Pumps

A new line of 6-in. diameter submersible pumps has been placed into production by the F. E. Myers & Bro. Co. The new line is particularly suitable for deep well installations where large volumes of water are needed, company officials state. The pump can be installed in wells as deep as 700 ft. The line's top capacity at a 50-ft. depth is more than 13,000 gal. of water an hour. It is called the

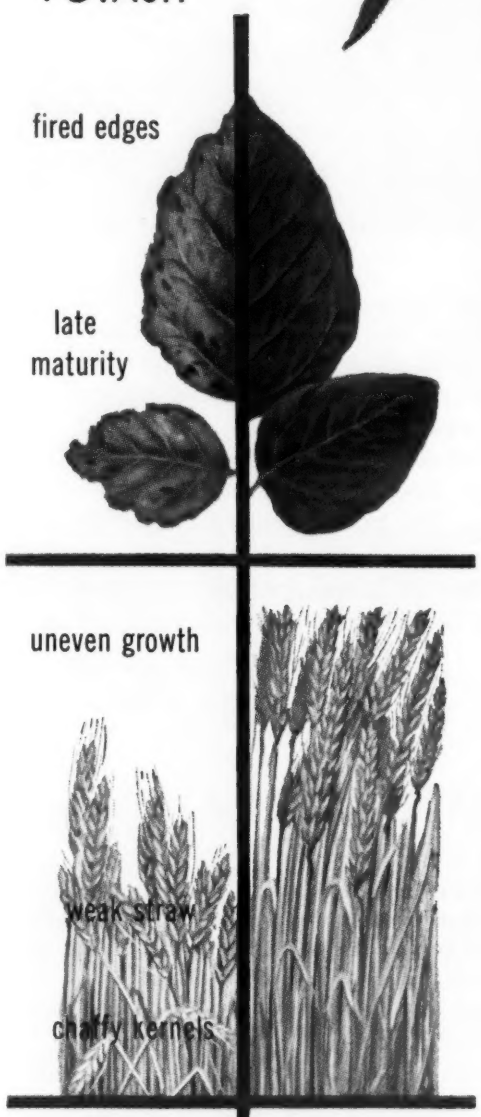


"SC" submersible pump and operates completely under water. It is a combined pump and motor unit. The pump is available in 5, 7½, 10 and 15 hp. sizes. Secure details by checking No. 6677 on the coupon and mailing it to Croplife. Please print or type name and address.

No. 6676—Mixer-Spreader

A new mixer-spreader optional feature to the Simonsen fertilizer spreader has been placed on the market by the Simonsen Manufacturing Co. This development was designed by Simonsen engineers to meet the needs of operators who want to stock straight ingredients yet offer a wide variety of ratios, company officials said. It permits carrying a small inventory while giving added service. It is claimed that the mixer-spreader accurately mixes the ingredients as it spreads. The compartments are filled

with the ingredients and the gate on each compartment is adjusted for the desired ratio. A stainless steel conveyor carries all the ingredients to the distributor fan where they are mixed and spread. The feature is available, with a choice of two or three compartments. Existing Simonsen fertilizer spreader boxes can be modified to the new mixer-spreader. More information may be obtained by checking No. 6676 on the coupon and mailing it to Croplife. Please print or type name and address.

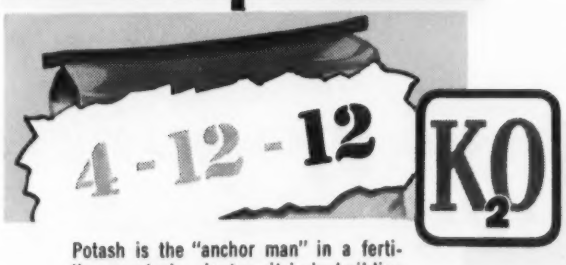


IN THE SOUTH
POTASH
GIVES YOU:

HIGHER YIELDS—Southern crops yield their best *only* when supplied with plenty of potash, in a balanced fertility program. Potash enables crops to make better use of moisture, fight off disease better.

BETTER QUALITY—Higher grade cotton at the gin, more market appeal on vegetables and fruits. Potash helps give you these. And potash gives you more feeding value per acre of corn, pasture with greater carrying capacity.

AMERICAN POTASH INSTITUTE, INC.



Potash is the "anchor man" in a fertilizer analysis—just as it is in building quality and yield in crops. Don't wait for hunger signs. Test soil, find plant food need. Consult your official agricultural adviser.

MEMBER COMPANIES

- American Potash & Chemical Corporation
- Duval Sulphur & Potash Company
- Potash Company of America
- Southwest Potash Corporation
- United States Potash Company Division of United States Borax & Chemical Corporation

This 4-color ad is just one of many aids to help

You Sell More Fertilizer!

see next pages for more

TO SELL MORE FER

The American Potash Institu services and ideas you can

For more than 22 years, the American Potash Institute has helped expand the markets for fertilizers on American farms.

During this period, tonnage of fertilizers purchased by American farmers has made the most dramatic gain in the history of the fertilizer industry (see chart, lower right).

These tonnage gains have been the direct result of an increasing awareness by farmers of the role balanced fertility programs can play in more profitable farming. Many individuals and groups have helped to create and expand this awareness.

The American Potash Institute is proud of having shared in this joint effort. A service organization, it is designed, equipped, always glad to help you expand the demand for balanced plant foods.

Following are descriptions of some of the services available, *right now*, through the Institute. These services can help you sell fertilizer. You are invited to make use of them. Simply mail the coupon at the upper right, or get in touch with the American Potash Institute representative in your area.

REGIONAL FIELD AGRONOMISTS

Practical scientists of stature and long experience *in your area*, these men (to see photos, turn page) are glad to give advice and help in any way they can.

SLIDE SETS

Potash deficiency symptoms, soybean fertilization, alfalfa production—these important stories are clearly told in Potash Institute color slide sets, each with its own accompanying narration. You can use them for dealer or customer meetings. Teachers and agricultural advisers use them for classes and farm meetings.

FERTILIZER DEMONSTRATIONS

In cooperation with official agricultural agencies, Potash Institute staff members help set up field demonstrations, which show farmers the value of correct fertilizer usage.

ADVERTISING

The American Potash Institute carries on an extensive advertising program throughout the United States and Canada. The four-color message on the preceding page is one of the regionalized advertising messages which will appear in major farm magazines this spring and summer. This advertising program *sells fertilizer for you.*

AID TO FARM PRESS, RADIO, TV

Potash Institute staff members work closely with farm magazine editors, radio and television farm directors. Many articles, photos and broadcasts stressing improved soil fertility practices have been originated or aided by Institute agronomists.

MONTHLY MAGAZINE

The American Potash Institute's magazine—*Better Crops with Plant Food*—is read and studied by agricultural leaders. Articles in *Better Crops* are written by authorities in the soil fertility field. Its circulation exceeds 25,000.

MOTION PICTURES

For dealer meetings, customer meetings or showing on local television stations, use a free-loan Potash Institute motion picture. Over 300,000 people see them annually. There are full-color sound pictures on soil testing, deficiency symptoms, tissue tests, and other subjects. Send coupon above, right, for full list and how-to-borrow instructions.

REPRINTS OF SOIL FERTILITY ARTICLES

From 300,000 to 400,000 are distributed annually. These reprints from *Better Crops* go to high school and college classes, and are used by the fertilizer industry as direct-mail or over-the-counter fertilizer educational materials.

RTILIZER

titute offers
n use *today*

MAIL THIS COUPON TODAY!

It will bring you—at no cost—tonnage-building soil fertility facts you can use.

The American Potash Institute, Inc.
1102 Sixteenth St., N.W., Washington 6, D.C.

Gentlemen: Please send me information on the topics checked below:

- ☐ Monthly Magazine, "Better Crops"
- ☐ Wall Posters
- ☐ Slide Sets
- ☐ Motion Pictures
- ☐ Reprints of Soil Fertility Articles
- ☐ Abstracts
- ☐ Special Booklets
- ☐ Regional News Letters

Name _____

Address _____

Town _____ State _____

STUDY THE CHARTS

WALL POSTERS

Potash Institute charts, on nutrient deficiencies, plant food utilization by crops, and other soil fertility topics, have become standard sources of farm knowledge on fertilizers. They are available for your use, for display purposes.

REGIONAL NEWS LETTERS

What's new in soil fertility in your area. A time-saving digest for you, and extra copies are available for your customers.

FELLOWSHIPS, RESEARCH GRANTS

American Potash Institute graduate fellowships and research grants in some 40 states and provinces have helped train a large number of professional agronomists for responsible positions in the fertilizer industry, colleges, experiment stations and the federal government. The research thus sponsored has developed valuable information concerning correct fertilizer usage, leading to higher levels of fertilizer consumption.

ABSTRACTS

A time-saving service. Available on request, abstracts of scientific articles on soil fertility, from journals and bulletins around the world.

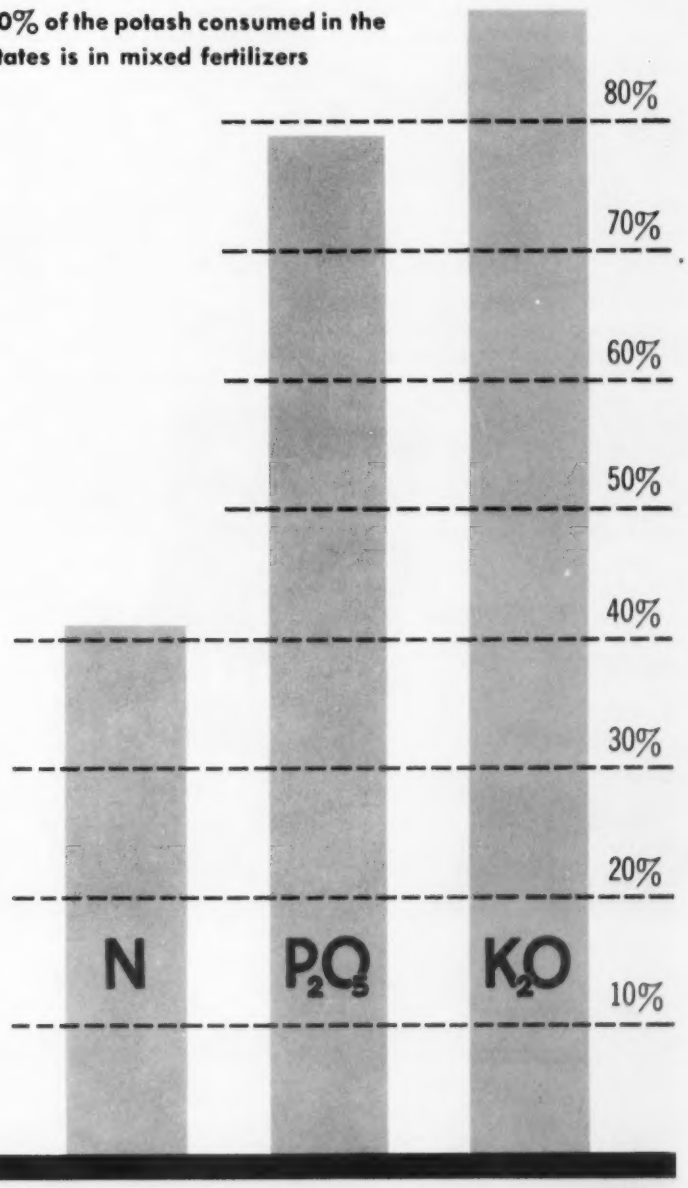
SPECIAL BOOKLETS

The newest: "Fertilizer Placement." Send the coupon (above, right) for your copy, and for copies to give your customers. Forty pages of the latest information on an all-important subject. Other helpful booklets are available, too—just mail the coupon, and a complete listing will be sent you.

RELATIVE CONSUMPTION OF PLANT NUTRIENTS IN MIXED FERTILIZERS

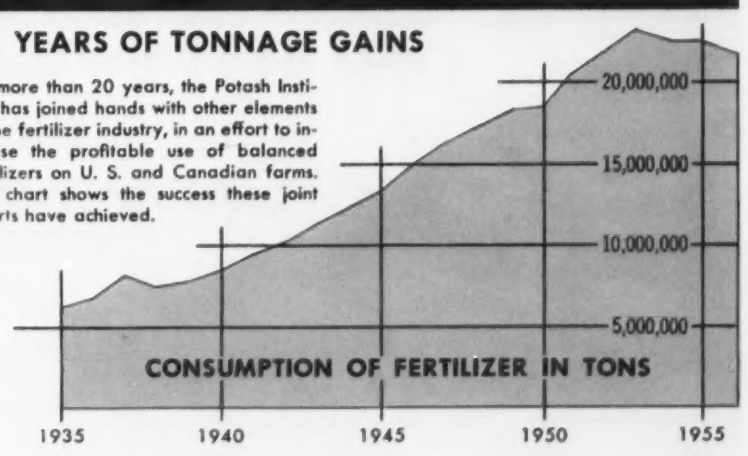
(Source: U. S. Dept. of Agriculture, June 1957)

Nearly 90% of the potash consumed in the United States is in mixed fertilizers



22 YEARS OF TONNAGE GAINS

For more than 20 years, the Potash Institute has joined hands with other elements of the fertilizer industry, in an effort to increase the profitable use of balanced fertilizers on U. S. and Canadian farms. This chart shows the success these joint efforts have achieved.



Serving the Fertilizer Industry

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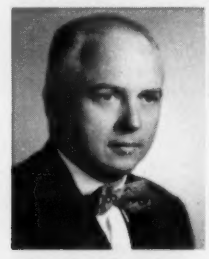

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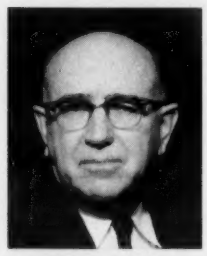

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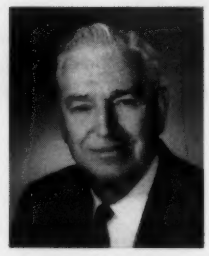

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- Southwest Potash Corporation
- United States Potash Company Division of United States Borax & Chemical Corporation

HEAD TEXAS GROUP—New officers and directors of the Texas Agricultural Limestone Assn. elected during the association's recent meeting at Texas A&M are shown in the top photo. They are, from left, Ned Snead of Texas Crushed Stone Co., Austin, president; A. W. Herter of Herter Liming Co., Lexington; E. R. Adams of Adams Farm Service, Beaumont, vice president; C. A. Groves, Jr. of Groves Brothers Lime Service, Longview; C. D. Roberts of Roberts' Soil Service, Trinity; E. C. Renfro of Huntington, and E. W. Heard of Heard & Gilmer, Canton.

Committee chairmen who will carry the brunt of the association's new educational program are shown in the bottom photo. They are, from left, Ned Snead of Texas Crushed Stone Co., Austin, chairman of the executive committee; A. W. Herter of Herter Liming Co., Lexington, by-laws committee; Jack Pearce of Texas Crushed Stone, Austin, promotion & education committee; E. B. Snead of Texas Crushed Stone, Austin, membership committee; C. D. Roberts of Roberts' Soil Service, Trinity, budget committee; Randolph Richardson of Wesco Stone Corp., Lake Charles, La., public relations, and Lloyd Groves of Canton, program committee.

Texas Agricultural Limestone Assn. Adopts Extensive Educational Program

COLLEGE STATION, TEXAS—The Texas Agricultural Limestone Assn. launched a thorough-going educational program during its two-day quarterly meeting here recently.

"We will attempt the education of the public on the value of limestone in soil conservation and restoration programs," Ned Snead of the Texas Crushed Stone Co., Austin, new president of the association, said.

Mr. Snead was elected during the meeting along with E. R. Adams of Adams Farm Service, Beaumont, vice president. Directors named are C. A. Groves, Jr. of Groves Brothers Lime Service, Longview; C. D. Roberts of Roberts Soil Service, Trinity; E. C. Renfro of Huntington; E. W. Heard of Heard & Gilmer, Canton, and A. W. Herter of Herter Liming Co., Lexington.

Membership of the organization blankets the eastern half of Texas, according to M. K. Thornton, executive director.

The education program of the association will operate in these ways:

Direct mail from the central association office in College Station to more than 2,200 agricultural leaders; every Soil Conservation Service board member in the eastern half of the state; board members of the Agricultural Stabilization Committee; to vocational agriculture teachers, county agents, bankers, newspaper editors and radio and TV farm directors;

Furnish news media of all types with factual information regarding use of lime in soil improvement programs;

Through a stepped-up program of personal contacts and meetings;

And by trying to get every farmer whose land is serviced with lime to leave a single, unserviced strip through the field or pasture to show the contrast between limed and unlimed areas.

Membership of the association is broken down into four major categories. These are spreaders, producers, associate members, and advisory members.

Spreaders who are members, in addition to those already named, include Gilbert Endres of Muenster; Lloyd Groves of Canton; Ed C. Hammock of Atlanta; Saxon Harris of Saxon Harris Store, Carthage; Paul R. Lennier of Pittsburg Fertilizer Co., Pittsburg; Henry Koym of Koym's Mobile Mill and Feed Store, East Bernard; Frank Krauskopff of Houston; and Tom Wortham of Bryan.

Producer members other than those mentioned earlier include G. A. Meihaus of Ft. Worth Sand & Gravel Co., Ft. Worth; J. C. Hamby of G. C. McBride Co., Brownwood; John Langston of Servtex Materials Co., Texas Lime Co., Cleburne; E. B. Snead, father of the association's new president, and Jack Pearce, both of Texas Crushed Stone, Austin, and J. C. Thompson of Wesco Stone Corp., Dallas.

Associate members include T. Dean Brown of Canton Motors, Canton; Travis Bryan, Jr. of the First National Bank, Bryan; R. L. Harris of Marietta; John King of Hercules Powder Co., Dallas; V. A. Clements of Longview National Bank, Longview; Julian Hurst of Pegues-Hurst Motor Co., Longview; Robb Motor Co., Trinity; J. E. Jenkins of Vibration Measurements Engineers, Evanston, Ill.; Gerome Watson of Canton, and Raymond Weatherford of Heard & Gilmer, Canton.

Advisory members include Dr. A. G. Caldwell, F. L. Fisher, R. J. Hodges, Jr., Ben H. Spears and E. M. Trew, all of the department of agronomy, Texas A&M College; Blueford Hancock, extension horticulturist, Texas A&M; Dr. R. J. Hildreth, department of agricultural economics and sociology, Texas A&M; Dr. D. R. Paterson, department of horticulture, Texas A&M; R. M. Marshall, state soil scientist, SCS, Temple; O. J. Moss, program specialist, state ASC, College Station; and W. Bassett Orr, deputy director, Food & Agriculture, International Cooperation Administration, Korea (APO 301, San Francisco, Cal.).

STORE SOLD

MODESTO, CAL.—The Home Feed and Locker Co., retailer of agricultural chemicals, has been sold by Charles Viss to Gerrit T. Hannink, effective Jan. 2, 1958. The store is located at 411 H Street, Modesto.

Early Top-Dressing Of Small Grain Urged

AUBURN, ALA. — Small grain crops top-dressed with nitrogen when grazing is stopped give greatly increased yields—especially when the topping is put on in late winter.

"Top-dressing should be applied around Feb. 15," J. C. Lowery, Alabama Polytechnic Institute extension agronomist, said recently. He said that in API tests oats made 10 bu. more per acre when top-dressed in mid-February than when top-dressed April 1.

This five-year experiment at the Upper Coastal Plain Substation near Winfield also showed how application rates affect total grain production. Mr. Lowery said oats which got no nitrogen at all made only 23 bu. to the acre. Sixteen pounds of nitrogen upped the yield to 41.8 bu., and a 48 lb. application of nitrogen sent the oat yield to 64.4 bu.

Researchers Study Temperature, Fertilization

KNOXVILLE, TENN.—Special conditions to simulate Tennessee's 16-hour summer growing day were created as part of a long range program designed to learn the nitrogen needs of farm crops in Tennessee.

In a recent report, Dr. W. L. Parks and W. B. Fisher, Jr., University of Tennessee agronomists, said that ryegrass grew best at 68° with nitrogen fertilizer applied at a rate of 100 lb. per acre.

Under artificially controlled conditions, the grass was grown in 16 hours of light per day at three temperatures of 50, 68 and 86 degrees.

The researchers found that the plants used the nitrogen fertilizer better at the 68° and 86° temperatures than at the 50° figure.

"The ryegrass plants did not grow as fast or use as much potassium, calcium, magnesium and phosphorus from the soil at the 50° temperature. Also the calcium content of the ryegrass increased as the temperature and rate of nitrogen increased. The phosphorus uptake and yield of forage rose together."

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TEXAS FERTILIZER

(Continued from page 9)

Agriculture." B. L. Henderson of B. L. Henderson & Sons, Houston, spoke on the Texas Plant Food Educational Society; B. L. Mitchelson and Arlan Woltemath of Spencer Chemical Co., presented an eye-opening flannel-board demonstration of "Economics of Fertilizer Use."

W. T. Bennett discussed the Texas Agricultural Extension Service's soil testing program; E. M. "Ted" Trew, extension pasture specialist, spoke on "Your Community Pasture Contest," and Reagan Brown, agricultural economics and sociology department, discussed rural community development.

Mr. Brown said: "Despite the fact that many families are leaving the farm, more families are participating in the Rural Neighborhood Contest (which is partially sponsored by the Texas Plant Food Educational Society) than ever before."

Dave Seay, Phillips Chemical Co., Houston, was elected president of the Texas Plant Food Educational Society to succeed B. L. Henderson, and Sherman W. Clark of Texas Gulf Sulphur, Houston, was reelected secretary.

Next year's Texas Fertilizer Conference will be held Jan. 6-7 in the Memorial Student Center on the Texas A&M College campus.

The Southwest Fertilizer Conference and Grade Hearing will be held July 17-18 at the Buccaneer Hotel, Galveston.

OVER THE COUNTER

(Continued from page 9)

available to the corn during the later critical growing period when the tassels were forming and the ears setting on. As a result of these practices, he harvested 130 bu. per acre of good quality corn. He figures he got back nearly four dollars for every one he spent on fertilizer.

"The other farmer somehow didn't get around to applying any fertilizer at all. He thought a little about it, but it seemed like it involved a lot of extra trouble and expense. The soil 'looked' good enough to him. His pappy didn't use any fertilizer and sometimes he got yields as high as 60 bu. to the acre in that same field. Maybe there was a lot of nonsense in all these new-fangled fertilizing ideas.

"His corn didn't look too good when it came up, especially when he compared the field with that of his neighbor's up the road. But that was to be expected. He never had any luck. Nothing ever turned out right for him. Everything always went wrong.

"Then the flood hit the corn and knocked it every which way. Didn't seem to grow worth a dang after that. He got so disgusted he just let the weeds take it. When he shucked it out, he got about 25 bu. to the acre—mostly cow nubbins.

" 'There ain't any money in farming anymore,' he says, 'least ways not for a poor man.'

"Now, of course, his main trouble is that he hasn't been sold sufficiently on a good idea. Until someone does convince him that using fertilizer doesn't cost money but makes money, he'll stay a poor, unlucky farmer.

"Every dealer can find similar farmers in his own territory. If he succeeds in selling them and keeping them sold on the idea of using fertilizer properly and in adequate amounts, he'll gain that many additional friends and customers. Instead of liabilities, these farmers can become valued, productive members of the community. They can become money-makers for themselves and for you, the fertilizer dealer.

"So the moral of this little piece is: Even when you have a good thing, you've got to keep selling."

10,195 Lb. Yield Wins Texas Sorghum Contest

PLAINVIEW, TEXAS—A yield of 10,195.6 lb. per acre enabled Hubert E. Setliff to win the Texas Hybrid Grain Sorghum Contest for 1957.

In using a hybrid called Texas 620, Mr. Setliff fertilized the plot with 125 lb. of anhydrous ammonia per acre, 175 lb. of 0-45-0 and eight tons of barnyard manure. He watered the crop once before planting and three times afterwards.

Second place in the hybrid grain sorghum contest was won by Jerry Hawkins of Carson County whose grain yielded 8,433.9 lb. per acre. Third best crop was grown by Joe Bob Johnson, a Parmer County 4-H Club boy whose crop made 8,033 lb. to the acre.

In the Texas Hybrid Corn Contest, another local resident, 16-year-old Jerell Young won first place by growing 232.1 bu. to the acre. Jerell used Texas Hybrid No. 30, and put on one pre-planting application of 16-20-0 at the rate of 250 lb. per acre. Later he sidedressed with 100 lb. of anhydrous ammonia per acre.

This was not the first time Jerell placed high in the contests. He took fourth in the state contest in 1956 with a yield of 156.3 bu. per acre. More than 100 farmers and club boys entered the 1957 contests. Practically all the high winners live in the western plains section of Texas.

Borax Found as Answer To Prune Tree Problem

DAVIS, CAL.—A prune tree problem called "brushy branch" is actually boron deficiency, say researchers on the Davis campus of the University of California.

They got affected trees back into bearing in 1957 by spraying them with a borax solution in 1956. Borax applied in the soil shows promise in orchards, but the trees respond more slowly. The experimenters developed a method of identifying the difficulty by correcting it in single limbs—by placing dried boric acid in a hole bored in the limb and closing it with a dowel and graft wax. They report that correcting boron deficiency is important for improving not only yields but also the quality of fruit.

The name "brushy branch" comes from the dying back of shoots, reported the researchers, Carl J. Hansen and E. Louis Proebsting, both professors of pomology at Davis.

"Injured shoots remain dormant well into the growing season," said Mr. Hansen, "and usually die completely by late summer. But blossoming may be nearly normal unless boron deficiency is very severe. Despite good blossoming, the set is very poor, and most of the fruit develop shrunken areas, often closely resembling sunburn, particularly in the advanced stages. However, sunburn is ruled out by the fact that symptoms are equally severe on the shady side of the tree."

In trees sprayed once, in June, the yield the following year was five to ten times as great as in unsprayed trees nearby, reported the Davis professor.

CORN CONTEST WINNER

LAFAYETTE, IND.—Frank E. Blacker, Route 1, Romney, Tippecanoe County, has won the 1957 state contour five-acre corn contest, sponsored by the Purdue University extension service and the Indiana Crop Improvement Assn. R. O. Cole, extension soil conservationist at Purdue, reported that Mr. Blacker harvested 184 bu. an acre from his five-acre plot. Mr. Blacker produced his winning yield on silty clay soil which had been in alfalfa in 1955 and 1956. Using Indiana certified Chester hybrid KV-35, he planted the corn May 30, in 38-inch rows with plants eight inches apart. He applied 150 lb. of 4-16-16 fertilizer in the row, and with a deep-applicator, 200 lb. of 3-18-9 fertilizer was used.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

The Weed Society of America in its January meeting at Memphis, reported that weeds cost the American economy some $5 billion annually. Some 35 million acres were sprayed for weed control during 1957, the convention was told. Of this total, some 12 million acres were in corn. Dr. A. S. Crafts, University of California, Davis, was named president of the National group.

Iowa reported that only 7% of the farmers in that state applied insecticides to control corn borer, whereas 88% of the Iowa crop was infested with the insect. Another "severe" infestation was predicted for the 1958 season.

The value of early season control of cotton-infesting insects was stressed at the Mississippi Insect Control Conference held at State College, Miss.

A $200,000 superphosphate plant near Littlefield, Texas, was begun in January. It will be known as the Caprock Fertilizer Co., owned by Longhorn Construction Co., Sulphur Springs, Texas.

A new relatively non-toxic insecticide was discovered by USDA workers. It was claimed to have less toxicity than either pyrethrum or allethrin, but was slower in "knockdown" of insects.

Connecticut Valley tobacco growers have found their market for high grade leaf products to be drastically reduced because of new methods of cigar manufacture in which high quality plants are not necessary.

The Food and Drug Administration denied application for setting a tolerance of methoxychlor residue in milk. Thus, the product will not be used as a space spray in dairy barns, but may be dusted on cattle.

The U.S. Department of Agriculture struck back verbally at the charges made in a New York Times editorial that USDA was acting in an irresponsible manner in the fire ant eradication campaign. A spokesman for the Department said that domestic Tom cats killed more birds than would this entire campaign. The USDA also denied that it was "plunging ahead blithely" as the newspaper said, and declared that the entire program was planned with the cooperation of conservation and zoological officials and representatives of the fish and wildlife service.

Dr. S. N. Fertig, Cornell University, was elected president of the Northeastern Weed Control Conference at the group's annual meeting in New York. Jack Dreessen, herbicide expert for the National Agricultural Chemicals Assn., Washington, briefed the group on legislative and statutory limitations on the use of herbicides.

The U.S. Bureau of the Census reported that production of anhydrous ammonia during October, 1957 was greater than that of the same period of the previous year. Other chemical products showing gains over October, 1956, were ammonium nitrate, lead arsenate, nitric acid, phosphoric acid, and sulfuric acid.

Plans for the erection of a new superphosphate manufacturing plant in Canada were announced by Dominion Fertilizers, Ltd. at Port Maitland, Ont. The plant was expected to be producing early in the summer of 1958, the announcement said.

An eleven-man committee which had been making a ten-month study of TVA's fertilizer activities recommended that the big government agency should reduce its output of fertilizers to a point more in keeping with its educational program. Conclusions arrived at by the committee indicated that the TVA should broaden its scope of operations to reduce concentration in some areas where the sale of TVA fertilizers present severe competition to the commercial trade; that qualified use of TVA materials on the farm should be clearly of an educational nature, and that educational activities should be evaluated and supported on the basis of their merits in education, without regard to plant production capacity.

Big infestations of grasshoppers were found on over 18 million acres of rangeland in Texas, California, Montana, Colorado and parts of other states. A survey by USDA indicated that outbreaks requiring organized control efforts are likely to occur in 1958.

The cotton crop of 1957 was reduced by some 12% due to plant disease activities, the National Cotton Council reported. The 1957 disease toll was more than 1.5% higher than the average of losses for the period 1952-56, it said.

A good year as a whole was foreseen for the chemical industry in 1958. The Manufacturing Chemists' Assn., Washington, said that sales should total a record $24.4 billion for 1957, and an additional 5% boost for 1958 is foreseen.

Grace Chemical Co. named Dr. J. D. Aughtry as manager of agricultural services. He will assist the sales force in solving technical problems.

Industry leaders in both the pesticide and fertilizer trades looked at business prospects for 1958 optimistically. In Croplife's special "outlook" issue, it was predicted that demand for both plant food and pest control materials should pick up during the next season, and some hope was expressed that the price structure would become stronger.

The transportation picture was described as "chaotic", with prospects for increased freight rates appearing strong. Drouth in the midwest being ended, prospects for a better fertilizer season in that area were outlined as being favorable; and a spokesman for the liquid fertilizer industry voiced the opinion that the supply for 1958 may not come up to demand.

The line between supply and demand for potash was described as a thin one, with the world situation being an important factor in which way the line would vary. Prospects are good for increased consumption of potash during the next several years, it was pointed out.

A continuing increase in consumption of fertilizers was heralded by a west coast spokesman who said that each year sees greater amounts of plant food being applied in that area, at the rate of about 5% a year over that of the previous season.

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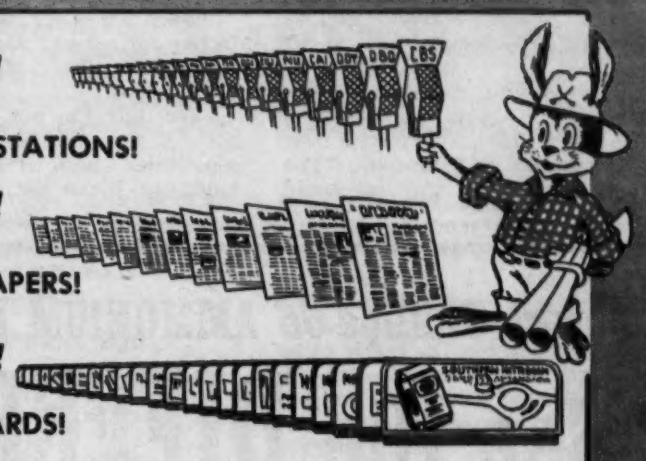

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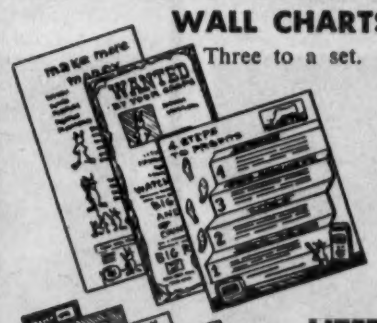

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Doing Business With

Oscar & Pat

By AL P. NELSON
Croplife Special Writer

When Oscar came home that January evening, he sniffed eagerly as he hung up his hat and coat on the elk head coat rack in the hall. Minnie had sauerkraut and spareribs on the stove and this was Oscar's favorite dish.

"Oscar," said Minnie, "could I take down the Christmas tree tonight? The needles are starting to fall off bad."

Oscar came into the dining room and stuck his fingers into the arm pits of his vest. He surveyed the tree. "Well, I suppose so," he said. "Too bad there isn't some way we could keep the trees from one year to another. I hate to haf to buy one every year."

"But this cost us only 50¢," Minnie said, her eyes wide. "We always wait until two hours before Christmas Eve to get the tree. That's when they practically give them away."

"Well, 50¢ is 50¢, and that's enough to pay for a tree," Oscar said, frowning. "Remember, Minnie, money is always in style."

"Yes, but I'm not," Minnie said a little sadly. "The ladies at the Aid sometimes laugh at me. Oh, not out loud, but I can see it in their eyes. That's because my clothes are so old, they are out of style."

Oscar's face got red. "Let them laugh. Half of them got so many debts they haf to laugh to keep cheerful. A fool and his money are soon parted. Rev. Altschulter said that last Sunday in his sermon, and he was right. I got a fool in my business. That Irisher. He just throws money aroundt, like that feller that threw a dollar across the Potomac in Washington. How foolish! I'll bet he didn't find it when he looked for it."

Oscar walked up and down self righteously. "Just look at that tree, Minnie. We haven't bought a new ornament in six years."

Minnie surveyed it ruefully. It had 10 tarnished ornaments, and five strings of popcorn.

"Just the same, Oscar, I wish we could afford lights some year," she said. "They look so nice—the colored ones."

"Lights!" thundered Oscar. "They use too much electricity. When I look outdoors and see people using lights at Christmas all over the trees and bushes, ach, I know why many of them lay awake nights and can't sleep. They are wondering how they can make endts meet. And then they go and burn lights."

"But they seem to have fun," Minnie said wistfully. "They laugh a lot."

"They have fun now, maybe, but later on, they don't, when they have no money to go aroundt," Oscar thundered. He bent down and picked up a book. "Minnie, I thought I toldt you to burn this book. I get mad every time I look at it."

The book, given anonymously, was entitled "How To Improve Your Personality" and had been sent by mail. The card inside had said, "From One Economist To Another."

"I'll bet that Irisher sent it!" thundered Oscar. "I know he did."

"It was not Pat's writing on the address or on the card," Minnie pointed out. "Somebody else must have sent it. But, Oscar—"

Oscar frowned. "But what?" he asked.

Minnie picked up the book and thumbed through it to a certain page. "I have been looking through it, Oscar. There is some good stuff in it that maybe both of us could use."

"Could use?" Oscar shouted, his face red. "Ach, what's wrong with my—my personality. I like it! I like it better—much better than that Irisher's."

"W—well," Minnie said, "maybe we should look at ourselves like others. You get so mad sometimes, Oscar, I am afraid you'll get sick. I found this in the book—listen: 'Irritability, anxiety, depression,'" she read very slowly, stumbling over some of the words. "'Of all the unpleasant characteristics which may serve to make an unpleasant personality perhaps the first to be mentioned, if a list were to be attempted, would be irritability or grouchiness.

"'But adjustment to civilized anxiety demands certain modifications of the raw instinct of anger to get along with people. A state of chronic or easily provoked anger means that a person is very insecure and he lashes out in the only way he knows.'"

Minnie looked up pleadingly at her husband. "Oscar," she asked tenderly, "are you insecure? Have I done anything wrong in our married life to make you that way?"

"Ach, such foolishness!" thundered Oscar. "I am not insecure. I am more secure than almost anybody in this town. I have money in the bank. I own this house and one more which we rent. I have some bank stock. I don't owe a cent to anybody. That Irisher, he that spendts so much all the time, and tries to give fertilizer away for cut prices all the time. He is insecure!"

"Oh, they don't mean that, Oscar," said Minnie, now really perturbed.

"They do, too," snapped Oscar. "That Pat sent me the book and hopes I will never get mad any more. If I don't get mad he can spendt all the money he wants and bankrupt the company in no time. I know he don't know nothin' about business. All he knows is to sell, sell, sell."

Minnie was quiet at this outburst.

"Give me that book," Oscar commanded. He practically tore it from her grasp, went to the kitchen door and opened it. Then he threw the book far out into the snowdrift with the vigorous action of a man throwing a ripe tomato at a hated political speaker. "That's what I think of that book!" he said contemptuously. "Now let me eat. I'm hungry."

Minnie did not answer. She was praying as nervously she dished up the sauerkraut and spareribs.

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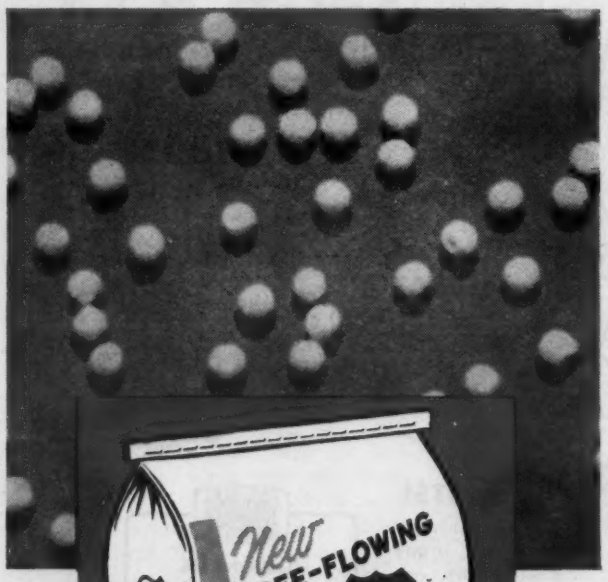

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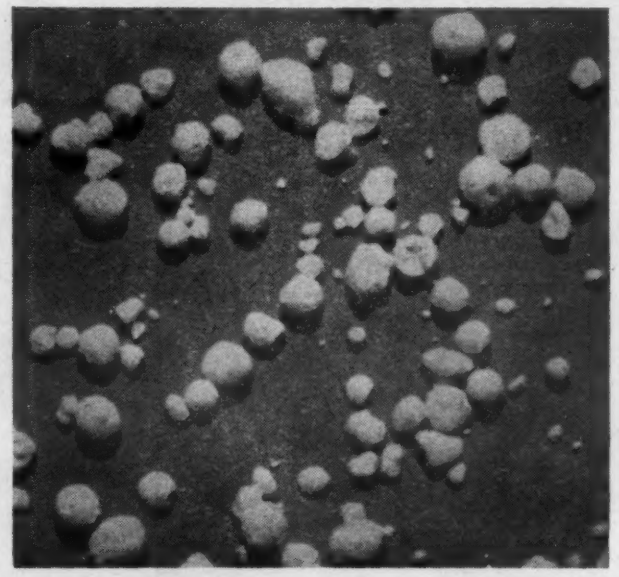

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Phillips 66

Robert H. Cannon | John H. Sanders | Decatur B. Campbell, Jr.

EASTMAN APPOINTMENTS—A reorganization of the field sales activities of the chemical division of Eastman Chemical Products, Inc., into three regional areas and the appointment of regional sales managers have been announced by Dr. J. E. Magoffin, vice president, and G. A. Kirton, sales manager. Robert H. Cannon, who has been in charge of the chemical division's New York office for the past several years, will now direct the sales of chemicals and dyes in the New England and Middle Atlantic states including the operation of the company's distribution center at Lodi, N.J. John H. Sanders becomes regional sales manager for those areas served by the division's Cleveland, Cincinnati and Greensboro, N.C. offices plus other areas of the south and southeast. Mr. Sanders was formerly in charge of the division's Cleveland office and, more recently, product manager for all chemicals produced at Kodak's Texas Eastman Company division. Decatur B. Campbell, Jr., has been appointed regional sales manager of the midwestern area and as such will direct the sales of the division's products in those areas served by the company's Chicago, St. Louis and Houston offices. Prior to the new appointment Mr. Campbell was in charge of the division's Chicago office.

Insect Meeting Scheduled For Kansas in February

MANHATTAN, KANSAS — The second annual Kansas insect and weed control conference is scheduled to be held at Kansas State College Feb. 4-5. The two-day event is under the sponsorship of the college departments of entomology and agronomy with the cooperation of the departments of botany and plant pathology, agricultural engineering, the extension service and members of the Kansas Entomological Commission, U.S. Department of Agriculture, the Food and Drug Administration and the State Department of Horticulture.

Subjects to be discussed by various speakers will include control of insects and nematodes in Kansas; the effect of the Food and Drug act on pesticide application; chemical weed control in vegetables and other crops; control of livestock pests; and the importance of correct insect recommendations by dealers.

Two Fulton Plants Sold To New Corporation

NEW ORLEANS — Fulton Bag & Cotton Mills, Atlanta, Ga., has sold its branch bag manufacturing plants at New Orleans and St. Louis. Purchaser is the Fulton Bag & Products Co., a newly formed corporation with headquarters in New Orleans.

Officers of the new company are: Jason M. Elsas, president; Peter H. Walmsley, vice president and treasurer; J. Frank Greeley, vice president, and H. H. Rogers, secretary all of whom have been active at New Orleans and St. Louis for many years. Other officers include Charles Powers, vice president, and Lee V. Williams, Jr., assistant secretary. Charles Sammons, Thomas A. Rose, Jr., and Mr. Elsas will serve as directors.

Mr. Elsas said the new company will manufacture and sell multiwall paper bags, paper pockets, elastic multiwall bags, waterproof paper lined bags, textile and burlap bags, canvas products, cotton picker bags, brattice cloth and paper specialties.

Bernard A. Mitchell, chairman of the executive committee, Fulton Bag & Cotton Mills, stated the sale of these two branches was pursuant to the corporate policy of reducing its investment in branch bag plants to give greater emphasis and attention to its integrated Atlanta operations. Under this policy it is also concentrating its bag and cotton specialty manufacturing at Atlanta.

The Atlanta plant will continue to produce cotton and burlap bags, waterproof paper lined carpet wraps and WPPL bags, canvas products, furniture pads and other items which the company has been making for 90 years.

Fulton's Atlanta textile mills and finishing plant, which have undergone extensive modernization, will continue to be expanded, Mr. Mitchell reported.

Both companies announced they will maintain salesmen and sales offices in strategic locations throughout the country.

GARDEN SUPPLY SHOW

PORTLAND, ORE.—Dates for the eighth annual Northwest Garden Supply Trade Show, sponsored by the Oregon Feed and Seed Dealers Assn., have been set for Oct. 28-29, in the Masonic temple, here. The appointment of Frank Stewart as general chairman was announced.

31 New Companies Register in California

SAN FRANCISCO—Thirty-one new commercial fertilizer registrants were listed by the Bureau of Chemistry of the California State Department of Agriculture in the three months between Sept. 18 and Dec. 16 of the year just ended.

These are in addition to firms previously registered in the state to sell chemicals. Included are 18 firms with northern California headquarters, 11 in southern California, and two from out of state: Washington Organic Fertilizers, Inc. of Wapato, Wash., and the Steel Division of the Ford Motor Co., Dearborn, Mich.

In two cases there were changes in firm titles: the Toews Feed Store of Winton, Cal. is now known as the John Toews Agricultural Supply Store; and the American Chemicals Products Co. of Los Angeles now goes under the name of Union Chemicals Products, Inc.

In addition to these, there were 18 companies registering to sell agricultural minerals. And five companies to sell auxiliary plant chemicals.

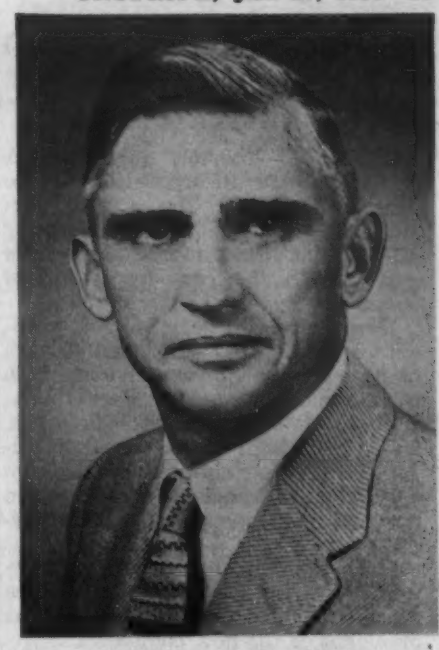
Georgia Specialists Aim For Larger Corn Yields

ATHENS, GA.—The all-time high Georgia corn crop of 1957 will provide the feed industry with more home-grown grain, J. R. Johnson, Georgia extension agronomist, declared recently.

The 1957 corn crop, valued at $88,895,000, was reported at 71,188,000 bu. on 2,738,000 acres, and led all other crops in dollar value.

Mr. Johnson said the goal of the extension department is to increase the state's average from 26 to 35 bu. per acre by 1965, and added that expanding feed business, especially in the broiler producing areas, will provide ample markets.

He said the factors which are contributing to the increased corn production are good selection of land, adequate fertilization, the use of recommended hybrids and good weed control programs.

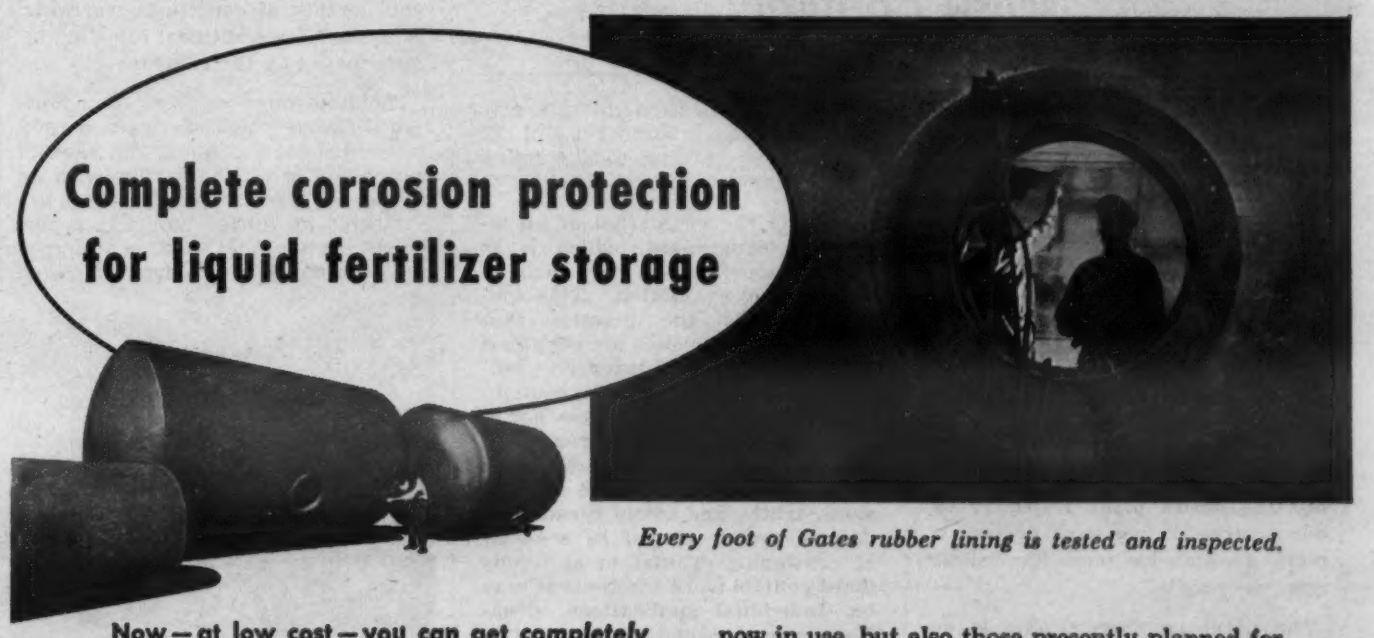


Richard H. Dorsett

JOINS WITCO—Richard H. Dorsett has joined the sales staff of the Witco Chemical Co., it has been announced by Stanley M. Freeman, sales vice president. Mr. Dorsett, who will make his headquarters in Dallas, is attached to Witco's Houston sales office. He will handle products of the Emulsol division as well as organic chemicals and rubber chemicals division materials. Formerly Mr. Dorsett worked in the sales department of the plant food division of Olin Mathieson Chemical Corp.

PEAR PSYLLA SAFEGUARD

SACRAMENTO — The El Dorado County Board of Supervisors and the Placerville City Council have been asked to enact legislation and provide for its enforcement to insure cleaning up of abandoned trees and small orchards in order to safeguard against an infestation of pear psylla. The action was requested by the board of directors of the El Dorado County Chamber of Commerce and the Placerville Fruit Growers Assn. as a result of pear psylla having been discovered last summer in Sacramento River Delta orchards.



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Panogen, Inc. Becomes Panogen Company, Division of Morton Chemical Company

CHICAGO—Morton Salt Co. has announced the incorporation of the Morton Chemical Co., a new subsidiary to which has been transferred all manufacturing, sales and research activities in the company's field of chemicals.

Daniel Peterkin, Jr., Morton president, stated that "continued growth of Morton's chemical activities, both in volume and variety of products; the success of our research program, and the growth potential of chemicals generally, prompted the decision to center all chemical operations in a separate company under the Morton name."

Mr. Peterkin announced the election of Joseph E. Rich, formerly vice president of the chemical division, as president of the new company.

Companies and properties transferred to the new Morton Chemical Co. consist of Morton Salt's chemical plants in Weeks Island, La., Manistee, Mich., and the Ringwood Chemical Co., Ringwood, Ill., with its subsidiaries Panogen, Inc., and Larvacide Products, Inc., and Morton's research laboratory, Woodstock, Ill.

Panogen, Inc., and Larvacide Products, Inc., have been merged into a division of Morton Chemical Co. under the name, Panogen Co., Division of Morton Chemical Co.

Panogen Co. continues to sell its line of agricultural chemicals of which Panogen liquid seed disinfectant and "Drinox" liquid seed treatment insecticide are best known. Other fungicides and a complete line of seed treatment equipment are also sold by the company. In addition, Panogen Co. will sell Larvacide, methyl bromide, and grain fumigation equipment.

The company also caters to the greenhouse and nursery trade with products like "Ringwood Rabbit Repellent," and "Pano-drench" for control of damping-off and other diseases affecting growing plants.

Panogen Co. will continue to operate under the direction of Petrus Hellman, president and general manager, and Charles Hutchinson, sales manager. Conrad Johnson will continue as manager for Larvacide and certain other products sold by the company.

The Morton Research Laboratory at Woodstock, Ill., built in 1954, is engaged in a broad research program including agricultural chemicals.

At the Ringwood plant the company produces Panogen liquid seed disinfectant and other agricultural chemicals as well as fine organic chemicals for use in pharmaceuticals and industrial chemicals.

North Carolina Soil Group Plans Meeting

RALEIGH, N.C.—Dr. J. F. Lutz, department of soils at North Carolina State College, has announced that May 22-23 are the dates for the first meeting of the Soil Science Society of North Carolina. These dates were set by the temporary officers in a recent meeting with committee chairmen. The May meetings will be in Williams Hall, North Carolina State College, Raleigh.

The temporary officers for the society are Dr. J. F. Lutz, chairman, and Forrest Steele, secretary. They were elected Oct. 5 by a group that met to consider the formation of the society. In this initial meeting there were persons from the fertilizer and lime industries, Soil Conservation Service, and department of soils at North Carolina State College.

The May meetings will include presentation of papers and field trips from Raleigh. Chairmen for the three initial committees are: Mr. Steele, constitution and by-laws; Dr. J. W. Fitts, program; and Dr. W. C. White, membership.

BRUSH CONTROL

(Continued from page 6)

type of activity. In many instances, tests should be established in such a way that evaluations can be made for a period of two to three years to observe amount and type of regrowth. The researcher must restrain himself and avoid enthusiasm for the quick burning or early "cosmetic effect" which may be misleading.

Patience is the keynote of woody plant research and products which often look best a short time after application may ultimately be the least effective. The researcher should evaluate not only the kill but the entire plant response. In our own work, we have devised a method which we term the "plant response profile."

The plant response profile is developed by evaluating a large number of individual clumps of a given species in such a way that a response rating is given to each clump. When these response ratings are converted to a percentage which can be plotted on a graph, the profile of the herbicidal activity on the species is illustrated.

For this purpose, an arbitrary numerical designation is given to a particular type of response, i.e., (1) little or no response, (2) partial top kill ordinarily restricted to the new terminals but never exceeding more than 50% of the top growth, (3) more than 50% top kill with regrowth from the remaining live stems, (4) complete kill to the ground line with new sprouts developing from the root collar or the lateral roots, (5) complete kill with no resprouting. This evaluation can be used any time after application, but it is most useful during the next growing season following application.

Beyond the evaluation of an individual experiment, which is in itself important, is the art of "cumulative evaluation." This concept accepts the premise that woody plant responses are such that one properly or improperly conceived experiment merely contributes to the art itself. It does not in itself solve a particular problem or provide the basis for large scale recommendations. Valid impressions, truths and sound recommendations are developed as a result of continuing evaluation of woody plant control work wherever it may be. Individual applications, situations, responses and results must be catalogued mentally for future reference in field observations.

Basic research in control of woody plants is very important and excellent contributions have been made by such workers as Crafts, Thimann, Bonner, Mitchell, etc. It is in this area of research that public agencies with their excellent facilities and trained specialists, can make vital contributions. The literature may be permeated by the results of empirical field work which contributes moderately to the art of woody plant control, but the stars that shine out in this literature are the discoveries on methods of translocation, specificities of compounds, modes of action, techniques of application, etc. The worker in the field should attempt to relate these basic findings to his field observations and to use these findings in a positive way to improve his results.

Right-of-way brush control research like any other research undertaking involves responsibilities with regard to the handling of the findings of that research. It is probably an understatement to say that there has been more confusion in the field of right-of-way brush control than the complexity of the problem can justify. Much of this has been perpetuated by fragmentary and/or misleading statements. Such statements, oral or written, have created many misconceptions. The researcher must realize that actually very little right-of-way brush control research work is being done, and the users in particular are hungry for "new" information. Conclusions properly described as tentative, however conscientious, often are not tentative to the user. They may be expanded out of proportion by the "grapevine" or may be regarded as established fact by the user.

In conjunction with the publication or publicity on special concoctions, it should be emphasized that "concoctions can confound confusion." For the most part, research with special concoctions, however well conceived, do not ordinarily result in research which is definitive and which has real value. It frequently creates an interest in materials which not only are unavailable but which may have toxicological and storage properties which make them unsatisfactory for public use.

In conclusion, there are obviously many things yet to learn, but chemical brush control has proved to be an eminently feasible, practical and economical practice. In spite of many smoke clouds, actually little change has been made from basic programs developed several years ago predicated on low volatile esters of 2,4-D and 2,4,5-T. There is abundant opportunity for sound fact finding research in this field.

New Applicator Developed to Place Soil Fumigant Below Surface for Pest Control

EUGENE, ORE. — A farm equipment dealer here has developed a new device for injecting liquid fumigants into the soil. Operators of Rear's Farm Supply Co., Eugene, have successfully applied the material by means of a blade injector hooked behind a wheel tractor. The firm is now manufacturing the applicator and making it available to growers in the area.

The injector was developed in cooperation with Stauffer Chemical Co. primarily to apply the company's soil fumigant product "Vapam." Although the material can be applied by sprinkling and other methods, injection has been found to be more satisfactory for many purposes, the company says.

Rear's will build nine injectors for Stauffer distributors located at key points in the Pacific Northwest, it has been announced. Thus, farmers in any part of this region can have their soil fumigant applied by this method if conditions warrant. A market for additional injectors is anticipated by the company.

The implement consists of a horizontal frame which carries two rows of vertical blades. Along the back of each blade is welded a tube with an opening at the bottom. The tubes are connected by rubber tubing to a pipe which carries the solution, pumped under pressure from a drum mounted on the injector frame. Small orifices at the exits from the pipe reduce the pressure, and determine the rate at which the liquid enters the tube.

Dragged behind the tractor, the blades sink into the soil to a depth of three to six inches, as regulated by a hydraulic lift device on the tractor. A water-filled roller behind the injector compacts the soil, providing a seal so that the gas liberated in the soil can do its work most effectively. The hookup of the injector is said to be simple, requiring only about fifteen minutes to assemble.

Five injectors have been built, four small ones which cover a 40-inch swath, and one larger which covers a 66-inch swath. The new injectors to be built for the Stauffer distributors will be the wider type. Garfield and Jim Rear, co-owners of Rear's Farm Supply, have become well known locally for their farm and industrial sprayers, fire pumps for timber companies and road departments, and agricultural machines such as orchard rollers and bean stringers.

The fumigant has been used successfully in the Eugene area by Page Walton, truck crop farmer in the River Road area. He cooperated in tests with Oregon State College experimenters in 1954, 1955 and 1956, applying the material both by sprinkling and by using a horizontal injector.

APPLICATOR INSPECTED—Clay Shelton, left, Stauffer Chemical Co. field representative, inspects blade injector with Jim Rear, Rear's Farm Supply, Eugene, Ore., manufacturer of the equipment designed especially for application of Vapam. Chemical is injected into soil via knife blades and roller at rear of tractor presses ground down after application. Power take-off pump (hidden behind steel drum) transfers liquid from tank to knife applicators.

FARM SERVICE DATA

Extension Station Reports

Higher soil temperatures result in increased nitrification of urea, a 45% nitrogen fertilizer now being widely used, say W. B. Fisher, Jr. and Dr. W. L. Parks, University of Tennessee agronomists.

The Tennessee agricultural experiment station scientists state that soil samples treated with urea fertilizer contained more nitrate nitrogen after incubation at 68 and 86° F. than samples incubated at a 50° F. temperature. The latter temperature resulted in a nearly constant rate of nitrification of about 25 lb. of nitrate nitrogen per acre per week. This held true whether or not the rate of urea nitrogen applied per acre was 100 or 200 lb.

Soil reaction remained about neutral during the experiment. All work was done in carefully controlled "growth chambers," or airtight steel boxes, Mr. Fisher and Dr. Parks say. In this way the light intensity and soil temperatures were controlled.

The Tennessee agricultural experimenters are aiming to find out the nitrogen needs of farm crops—especially the crops grown in Tennessee—over a several year period. Results will help the university's soils and crops experts to prescribe fertilization practices for the state's farmers.

★

Increased crop yields resulting from control of underground plant parasites have been demonstrated in a study recently completed at the North Louisiana Hill Farm Experiment Station at Homer, according to the Louisiana State University Agricultural Extension Service.

Dr. G. E. Wilcox, former assistant agronomist at the experiment station who is now at Purdue University, headed a four-year investigation of the effect of fumigation on plant parasitic nematodes and the subsequent effect on crop yields.

Fumigation treatments included methyl bromide, DD mixture, ethylene dibromide, Nemagon, Fumizone, and allyl alcohol. All chemicals gave good control of parasitic nematodes and did not affect the level of soil nutrients.

A healthy more vigorous root system was developed by plants growing on soil in which nematodes were controlled, Dr. Wilcox reports. The larger root system supported a larger plant. Root systems of plants on nonfumigated plots were discolored and were damaged severely by nematode attacks.

Yields of corn, cotton and sorghum were significantly increased by nematode control. Oat and clover yields were not affected, the agronomist points out. Fertilizers were equally effective on fumigated and nonfumigated plots.

★

Of all of the mixed fertilizer used in Kentucky during the spring season of 1957, 82% was in grades recommended by the Kentucky Agricultural Experiment Station. This percentage varied by individual counties from a high of 99% in Calloway to 28% in Harlan. A strip of counties along the Ohio River extending from Campbell County to Trimble County and including Henry and Pendleton counties, used 90% from the recommended grades.

A comparison of the spring fertilizer season in 1956 with the similar period for 1957 shows that for Kentucky as a whole, the percentage of mixed fertilizer in recommended grades increased from 76% in 1956 to 82% in 1957. Out of a total of 120 counties, 102 showed a gain in this percentage, comparing the two fertilizer seasons.

★

Soil management that "makes sense" must provide three basic essentials, reports M. B. Russell, head of the University of Illinois agronomy department:

1. The program must provide the amount and kind of plant food needed for high levels of production.
2. It must provide satisfactory soil tilth to promote the development of crop roots and to encourage good water, air and temperature conditions in the soil.
3. It must give protection against excessive soil loss and damage from erosion.

"No one single soil management program will fit all farms," says Prof. Russell.

"The best program for the farm will depend on the kind of soil, the amount of money the farmer has or wants to spend, the amount of risk he is willing to take, and his ability."

Any one practice in a soil management program must be related to all the other practices in that program and to the farming business generally, he points out.

"The kind of fertilizer used must be related to the kind of land the farmer has and the rotation he is following," says Prof. Russell. "And the rotation, in turn, must be related to the kind of livestock he has and the amount of labor and machinery he can use.

"If soil lacks several plant food nutrients, the farmer must supply the correct amounts of all to get the full use of any one."

CALIFORNIA STUDY

BERKELEY, CAL.—How fungal and bacterial infections of vegetables and smuts of cereals may be controlled by seed treatment and disinfection will be the subject of expanded studies conducted by the Department of Plant Pathology of the University of California at Berkeley, Cal., assisted by funds provided by Chas. Pfizer & Co., Inc. Dr. P. A. Ark, plant pathologist and one of the earliest investigators of the potentials of antibiotics in agricultural application, and Dr. J. Dekker, a noted Dutch researcher, will screen and evaluate antibiotics as seed disinfecting agents.

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GEORGIA MEETING

(Continued from page 1)

ship of the Grazing System and Feed Production Program which he described as "one of the best extension service programs," four summer meetings of the society in different sections of the state so members could see for themselves how good fertilizer practices pay on Georgia farms, and the publication of a folder showing results of the grazing system program.

Other accomplishments he referred to were the printing of 25,000 soil sampling bags for distribution through the extension service, sponsorship of a horticultural essay contest, distribution to members of detailed summaries of soil testing results, purchase of 100 soil tubes for use in the six Georgia counties in the intensified soil fertility program, and purchase of signs for agronomy demonstrations. Nearly 400 members were enrolled.

The entire program for the meeting, except that held in conjunction with the American Society of Agronomy where technical papers were presented, revolved around a discussion of "How Big is the Fertilizer Market in Georgia?" Members of both organizations, however, heard Dr. Glenn W. Burton, distinguished scientist of the Georgia Coastal Plain Experiment Station, discuss grassland agriculture in New Zealand at their joint banquet.

Members of the Georgia Plant Food Educational Society decided the fertilizer market is big—$200,000,000 extra profit big! To bring this out they presented a panel of agricultural leaders to tell why.

Dallas Cantwell of Southern Nitrogen Co., Savannah, who served as moderator, pointed out "we are really making progress on the soil fertility program. The society is keeping farmers in mind because that is where progress takes place." Referring to the $200,000,000 program, he said, "We spend many millions on research but we must get this information in the hands of people through the extension service. We must have teamwork with everyone telling the same story."

Dr. Ralph Wehunt, soils and fertilizer specialist for the Georgia extension service, called the soil fertility program a "guide to the future" and said that it had helped county agents and fertilizer dealers work together. He reported the program is gaining momentum although there is still a wide difference between the amount of fertilizer needed and the amount used. Dr. Wehunt declared many farmers are still operating in the blind and he cited the many educational materials being prepared by the extension service to correct this situation.

G. L. (Tony) Dozier of the Central Georgia Fertilizer Co. in Macon and newly-elected president of the society, appeared on the panel to give the manufacturer's viewpoint of the program. He forecast a market for 800,000 additional tons of fertilizer in a few years "if we put over our program" which he called "a golden opportunity." Mr. Dozier pointed out how his company "has tried to cooperate in every way possible with county agents" and told how he had placed copies of bulletins and other educational materials in the hands of dealers and how he also had worked with farmers in encouraging them to take soil samples and use the proper amounts of fertilizer.

He called on the fertilizer people present to "talk enthusiastically and merchandise quality. Get behind this program to enjoy a better tomorrow."

Byron Dyer, former county agent in Bulloch County and now district agent in southeast Georgia for the extension service, thanked the society for providing needed teaching aids. He pointed out how he had worked to get farmers in his county to see the advantage of using fertilizer on one crop, with results then spreading to all crops on the farm and to other farms in the community.

"Last year was no time to make mistakes," Mr. Dyer said, "and I don't know of anyone who followed our recommendations in regard to fertilizer who lost money."

He pointed out that Bulloch County farmers purchased $1,250,000 worth of fertilizer last year and "there is that much more business there if someone will go after it."

J. H. Wyatt, a fertilizer dealer and farmer at Brooklet, declared "the most profitable approach is not what the program will mean to me, but what it will mean to Georgia's agriculture and the state's economy." With that approach, he said, we will all prosper.

Mr. Wyatt congratulated the fertilizer industry for its awareness and keen desire to promote the soil fertility program. "With the present attitude of the industry," he predicted, "the challenge will be met and the program put over."

He called on dealers to pitch their business on a higher plane and win the confidence of the people with whom they do business. The industry needs dealers who are in the fertilizer business 365 days a year, he said. Mr. Wyatt also pointed out the need for careful attention to good management, use of proper seed and insecticides, etc., in a successful farming operation.

Sam Neville, outstanding Bulloch County farmer and 1957 state winner in the Georgia Grazing System and Feed Production contest, said that when he realized the need for additional income several years ago, he turned to fertilizer to meet that need. "Each time I increased the fertilizer, I noted a marked increase in yields and profits," he said.

The first step, Mr. Neville continued, is to find out what crops need. This has led him, he said, to buy higher-analysis fertilizer, and he called "additional fertilizer the best bet we've got to obtain extra profit." Mr. Neville called farmers, extension workers and fertilizer people coworkers and said information needs to be put in practical, usable form for farmers.

George Baker, a Monroe banker, pointed out that farmers must have their enterprises on a sound basis, saying that in this day of high capital requirements it is not possible to add or drop an enterprise at will in an effort to catch a high market.

Farmers of today, Mr. Baker continued, must be informed farmers. They must use soil tests. They must know what is in the fertilizer bag they buy. They must have technical know-how and use the experiment stations to the fullest advantage. They must adopt practices that will bring the most profit; they mustn't lay down and quit. He also stressed the importance of carrying out other practices which promote good farming and called for special attention to be given to marketing of farm products.

J. R. Johnson summarized the panel discussion by telling how the ideas presented will enable Georgia to reach the 10-year extension objective in agronomy. "We're proud of the chance to do something about raising farm income in the state," he said, "and we can make the income such that it will give the farmer the standard of living he deserves."

Mr. Johnson stressed the need for selecting proper plants and soil and fitting them together with proper amounts of lime and fertilizer. He cited the rapidly increasing population of the nation as a challenge to farmers of the country to produce additional quantities of high-protein foods from highly fertilized farms.

In addition to electing Mr. Dozier president, delegates to the meeting reelected Dr. Reed secretary-treasurer.

New district directors elected were J. B. Amos, Etheredge Guano Co., Augusta, and J. W. Walker, Waynesboro Fertilizer Co., Waynesboro, northeast; Allen Burson, Cotton Producers Assn., Atlanta, and Frank L. Wooten, Armour Fertilizer Works, Atlanta, northwest; Tom Carr, Carr and Boatwright, Sandersville, and W. W. Harley, Southern Fertilizer and Chemical Co., Savannah, southeast, and John French, Virginia-Carolina Chemical Corp., Albany, and L. D. Hand, Pelham Phosphate Co., Pelham, southwest.

Other directors who will serve for another year are Charles Frederick, F. S. Royster Guano Co., Athens; Steve Reynolds, Tennessee Corp., Commerce; W. L. Baughcum, International Minerals & Chemical Corp., East Point; W. J. Cook, Adair and McCarty Bros., Atlanta; R. E. Cole, Cole Fertilizer Co., Hazelhurst; O. A. Wolfe, Roche Manufacturing Co., Dublin; J. P. Champion, Jr., Albany Warehouse Co., Albany, and R. L. Hadden, Farmers Mutual Exchange, Moultrie. W. H. Appleton, Potash Company of America, Atlanta, retiring president, becomes director-at-large.

Three new directors were added from the University of Georgia. They are Dr. C. C. Murray, dean and coordinator of the College of Agriculture; W. A. Sutton, director of the agricultural extension service, and George H. King, director of the experiment stations.

Agronomists of the University of Georgia held their divisional meeting before the annual meeting of the Georgia Plant Food Educational Society and they participated in the society's meeting as well as the one of the Georgia Section of the American Society of Agronomy.

Fertilizer Demonstration Unit to Help Manufacturers Solve Production Problems

PITTSBURG, KANSAS—That the day may come when a fertilizer mixer who wishes to produce high-analysis materials with conventional equipment may merely "look up" most of his process answers is considered possible by the Spencer Chemical Co. The firm, which for the past year has been studying mixing problems in its newly-constructed mixed fertilizer demonstration plant here, declares that it is "not impossible" that trial and error experimentation on the part of mixers may be reduced greatly through data discovered in the pilot plant.

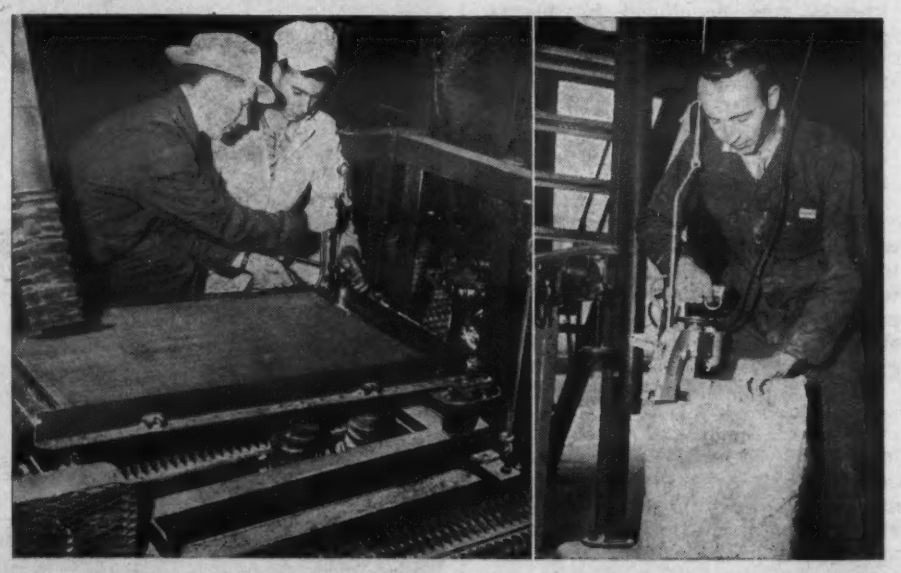
Operation of the plant, a conventionally equipped, ammoniator-granulator set-up on a "pilot" scale has been under the direction of the company's technical department since last June. Completed in February of last year, the plant was "checked out" by Spencer's research and development division and then turned over to the technical department for the study of mixer problems.

"We're trying to develop as much 'know-how' as possible about solving common mixer problems," says Ralph Miller, head of the company's technical department. "Producing high analysis mixed goods with conventional equipment is, of course, a problem which many mixers are tackling now or may soon have to tackle.

"Some of the answers we're trying to develop on this include: production costs, using various available raw materials; formulas, production rates with standard equipment and physical properties of the finished material. We go so far as running storage tests to check mechanical condition," Mr. Miller says. Among the ratios which are being studied with a view toward learning how they can profitably be increased to the so-called "high" analysis level are: 1-1-1, 1-4-4, 1-1-0 and 1-4-0.

A promising development from the work at the mixed fertilizer demonstration unit is the effort to solve the sparger corrosion problem. According to Mr. Miller, "The work to develop a better sparger has been almost a full-time project involving everything from metallurgical studies to engineering design. We now have what we think is not only an improved sparger from the standpoint of corrosion resistance, but a design which will give better distribution." He indicated that the new sparger is currently undergoing commercial testing and that results with its use so far had been encouraging.

In other phases of the work at the demonstration unit, headway has been made in granulating "troublesome" grades such as 5-20-20 and 6-24-12. Data is also being accumulated on the use of phosphoric acid in granulation. How best to lick the fume problem has also been studied at the demonstration unit and word is awaited on the commercial evaluation of a fume removal unit developed here.



AT MIXED FERTILIZER PILOT PLANT—Technicians at Spencer Chemical Co. mixed fertilizer demonstration unit prepare to change a shaker screen, as seen at left. The demonstration unit is equipped to produce any analysis considered chemically feasible, using commercially available raw materials. Studies are made to develop improved processing information for distribution to the mixed fertilizer industry. Innovations in mixer equipment, such as an improved sparger design, are also being studied.

In the photo at the right, a worker prepares to store a sample of mixed fertilizer to check its mechanical condition. This is one of the steps taken in a broad study at Spencer's demonstration unit. The plant is located at Spencer's Jayhawk Works near Pittsburg, Kansas.

E. W. Harvey

E. W. Harvey Retires From Nitrogen Division

NEW YORK—E. W. Harvey, one of the pioneers in the introduction of nitrogen solutions, retired Jan. 1 from the Nitrogen Division of Allied Chemical & Dye Corp. He was with Allied Chemical for 39 years.

During his career with Allied, Mr. Harvey worked on the agronomic, technical and sales aspects of the fertilizer industry. He is noted for his work in the technical aspects of using nitrogen solutions in fertilizer mixing and for direct application.

When Nitrogen Division was formed through consolidation of two other Allied divisions in 1952, Mr. Harvey was appointed director of sales. He was in this position until 1955, when he became director of technical service, the position from which he retired.

A native of Parsons, Kansas, he is a graduate of Kansas State Agricultural College, holding a B.S. degree in agronomy. He also holds an M.S. degree in agronomy and agricultural chemistry from Rutgers University. Mr. Harvey is now devoting nearly full time to managing his fruit and dairy farms in Cream Ridge, N.J.

Midwest Shade Tree Conference Program Set

CHICAGO—The 13th annual meeting of the midwestern chapter of the National Shade Tree Conference will be held Feb. 19-21 at the LaSalle Hotel, Chicago. The program is primarily directed to discussion of shrub and shade tree problems of concern to those who live and work in the Midwest.

Included on the program will be the following topics and speakers:

"Systemics in Pest Control," David E. Donley, U.S. Department of Agriculture Central State's Forest Experiment Station, Columbus, Ohio; "Dutch Elm Disease and Elm Phloem Necrosis," Richard Campana, Illinois Natural History Survey, Urbana, Ill.; "Birds and Dutch Elm Disease Control," speaker to be announced; "Soil Structure and Treatment for Plant Growth," Chris Doll, Bluffs Experimental Fruit Farm, Council Bluffs, Iowa; "Life Cycles of Insects," Donald L. Schuder, Purdue University, Lafayette, Ind.; "A Career in Arboriculture," Kenneth B. Kirk, Shield Shade Tree Specialists, Clayton, Mo.; "Distribution of Food Elements in Trees," W. H. Bragonier, Iowa State College, Ames, Iowa; "Oak Wilt Disease," T. W. Bretz, University of Missouri, Columbia, Mo.; "Cedar Apple Rust," Forrest Strong, Michigan State University, East Lansing, Mich.; "Fire Blight on Ornamentals," Robert N. Goodman, University of Missouri, Columbia, Mo.; "Verticillium Wilt Disease," J. C. Carter, Illinois Natural History Survey, Urbana, Ill.; and "Scale Insects on Ornamentals," E. F. Herrbach, Standard Oil Co., Chicago.

LOWER SUPPORTS

(Continued from page 1)

of parity. He asked Congress to give the Secretary discretionary authority to set supports on corn and other of the current basic commodities and dairy products at between 60 and 90% of parity, in place of the present range of 75 to 90%.

At the same time, broader authority over acreage allotments was asked for the Secretary of Agriculture so that when he lowered price supports on wheat, cotton, rice, tobacco and peanuts, he could make a compensatory adjustment in acreage allotments of up to 50% over the levels now provided by legal formulas.

As part of the proposed program, the "escalator" clause in the present law would be ended. This requires supports for wheat, cotton, corn, rice and peanuts to be increased when supplies decline. Secretary Benson has noted that this provision would boost the support level and bring on new surpluses after supplies had declined to certain statutory levels. Under the proposed plan, the Secretary would have discretionary authority in setting supports within the specified range.

Would End Corn Allotments

Another principal part of the message was a request that Congress end the fiction of corn acreage allotments at the close of this crop year. This would put corn on the same basis as other feed grains, which do not now have acreage allotment provisions.

Such a decision would, if approved by Congress, make corn a non-basic commodity. USDA could fix supports at between 60 and 90% of parity—the range also requested for the other basics.

Other requests included one to end the acreage reserve phase of the Soil Bank.

Immediately following the presidential message, Republican stalwarts—not including GOP farm leader in the Senate—Sen. George D. Aiken of Vermont—introduced a bill to make the administration proposals effective.

It is understood that Sen. Aiken is unhappy over the recent action on the reduction in dairy supports to 75% of parity. He believes that ultimately the weight of the present support program would reveal the inherent defects and that Mr. Benson may have been wiser politically to go along with current dairy support levels.

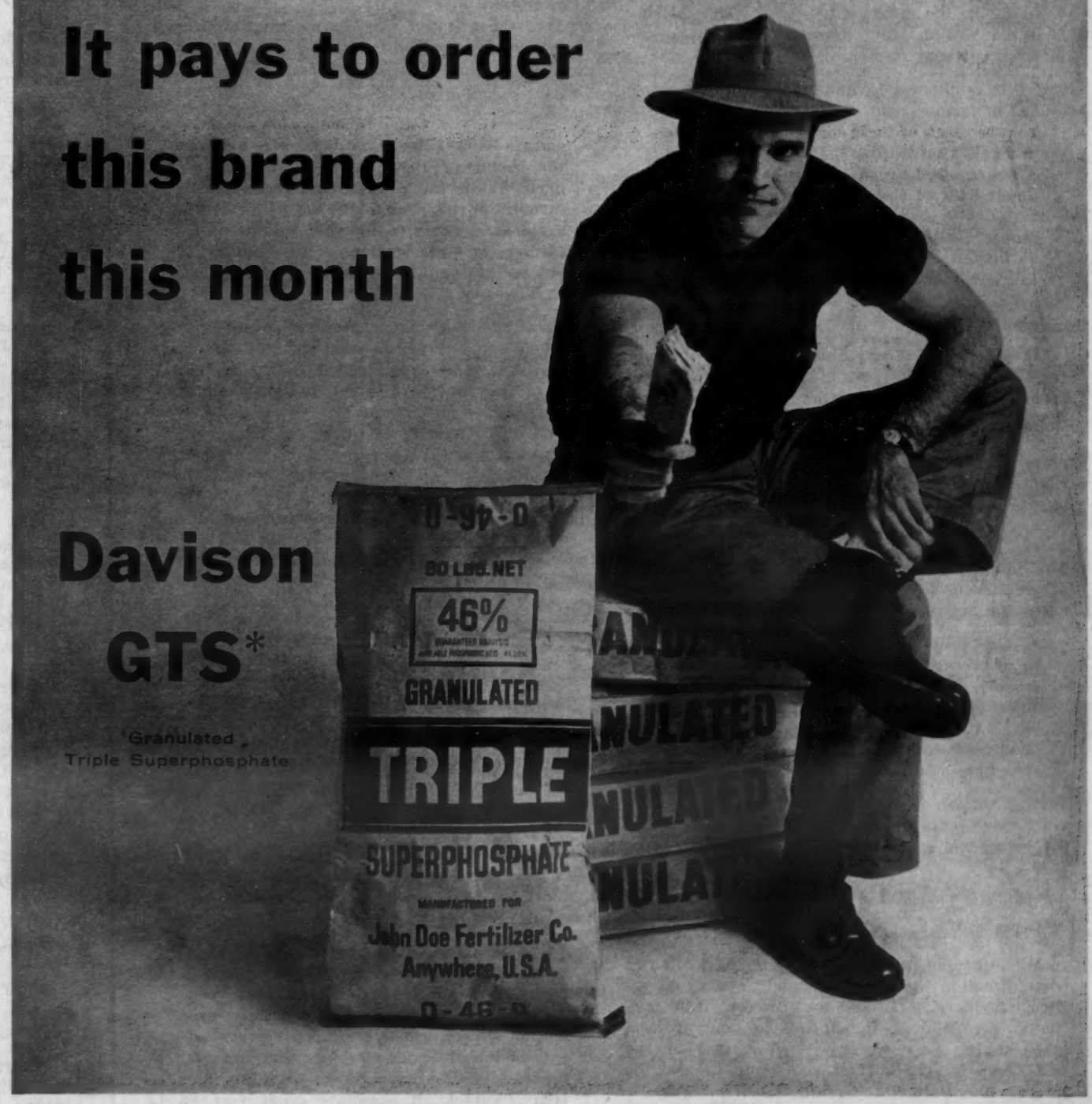
The Democratic farm opposition, as expected, rose to denounce the Benson plan.

Any thoughts that the President plans to discard Mr. Benson at this time must be dismissed on the basis of his unequivocal endorsement of the policies which Mr. Benson has repeatedly advocated.

The extravagant attacks which met Mr. Benson when he appeared before the Senate agriculture committee to detail his policies will only make President Eisenhower even more stubborn in his support, observers believe.

Big Dave says:

It pays to order this brand this month



Come March, April and May, orders for Davison Granulated Triple Superphosphate reach their peak. By ordering your supply of Davison GTS this month, you'll be sure to get as much as you need of the triple superphosphate *all other granulated products are compared to.* Remember: Davison GTS guarantees you a 46% A. P. A. minimum. It is unsurpassed for direct application. It's dust free, it spreads evenly, flows freely, won't cake. And it's ideal for formulation of dry materials, particularly alkaline goods such as 0-25-25 and 0-20-20. Won't break down in handling, packaging or storage. Available in bulk or bags. Get the brand guaranteed to satisfy you on every count. Order your supply of Davison Granulated Triple Superphosphate *this month.*

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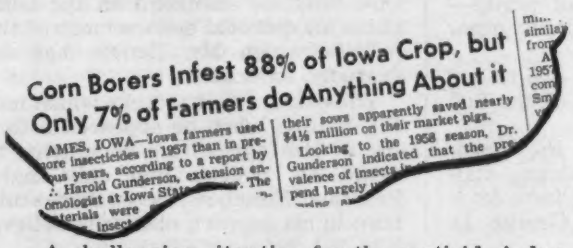
A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Southern states.

Iowa Farmers Adamant Toward Pesticide Use


Corn Borers Infest 88% of Iowa Crop, but Only 7% of Farmers do Anything About it

AMES, IOWA—Iowa farmers used ... more insecticides in 1957 than in previous years, according to a report by ... Harold Gunderson, extension entomologist at Iowa State ... terials were ... insect ... their sows apparently saved nearly $4½ million on their market pigs.

Looking to the 1958 season, Dr. Gunderson indicated that the prevalence of insects ... depend largely ...

A challenging situation for the pesticide industry and its sales organization in the Midwest was seen in the year-end report in last week's Croplife by Dr. Harold Gunderson, extension entomologist at Iowa State College. He pointed out that applications of insecticides for control of European corn borer were about the same during 1957 as they were during the previous two years. This, he said, is in spite of the fact that 1957 was the second worst borer year on record.

It is difficult to understand the reasoning of farmers who will allow this insect to ruin so much of their corn crop. Dr. Gunderson says that during the early part of July, when the first brood of corn borer is active, about 62% of the state's corn crop was infested with an average of 250 borers per 100 plants. Little was done to control this pest, so by fall, the survey showed that 88% of the corn crop was infested and the borer population averaged 397 borers per 100 plants.

It is evident, of course, that had more farmers treated for the first brood of borers, the heavy late summer infestation would not have been so likely to occur.

Because of this neglect in applying of available materials to halt the corn borer, Dr. Gunderson said the total loss from corn borer damage in Iowa is estimated at from $70 million to $100 million.

Only 7.4% of Iowa farmers treated for corn borer. Those who did, realized a return of about 6 million bushels of corn, almost 4 million bushels of which were "clear profit," according to the state extension entomologist.

Certainly, here is a market that can well be concentrated upon by the trade in the seasons ahead. Apparently too many of the Iowa farmers have decided they can "live with" the corn borer rather than to fight back and save much of the crop from destruction.

It is the job of the industry at all levels to convince these corn growers that the use of pesticides to protect the crop is well worthwhile.

Survey Indicates Farmers Don't "Shop" for Fertilizer

While people in the trade are trying to find in what direction the ball is going to bounce as regards farmers' attitude toward fertilizer purchases, any indication pointing to how growers are thinking is a welcome factor. One of the best ways to find out, of course, is to ask the farmers themselves.

The Nitrogen Division of Allied Chemical & Dye Corp. has just made public the findings of a survey made for it in four midwestern states by an independent group of analysts. The 400 farmers interviewed gave answers that present an interesting insight on how much importance fertilizer users place on brand names and on price, as well as defining the buying habits of farmers.

A summary of the survey brings out these points:

1. The farmers interviewed indicated that they do little "shopping around" for fertilizers. They make their buying decisions in the spring of the year, and are for the most part loyal to their dealer. They believe that there are no significant price differences for the same quality of materials.

2. Most of the farmers interviewed do not buy all of their fertilizer needs in one purchase. This is due to two main reasons: lack of storage space for the entire season's needs; and also because the user is unable at the beginning of the season to estimate accurately how much he will need.

3. The dealer is pointed out as the main source of information about form, analysis, and amount of fertilizer to be used. Farm magazines and state farm papers are an important mass media source of information, the farmers said.

4. Very few of the farmers expressed belief that there is any difference between fertilizers of different manufacturers, which are of the same form and analysis.

5. It was noted that in most cases dealers carry several brands of fertilizers, and very seldom do they attempt to get the farmers to switch brands.

The survey, taken in the states of Michigan, Indiana, Illinois and Ohio, was made in the spring of 1957, Nitrogen Division reports. While the results of interviews with farmers in this area might not be at all the same as answers to the same questions by farmers in other sections of the country, it is nonetheless interesting to see what they have to say.

Additional information from other surveys being made under the auspices of the National Plant Food Institute is being added to the industry's store of information and will be very helpful in plotting future sales strategy.

The importance of fertilizer as an element in the improvement of crops and crop production scored highly in the farmers' replies to a question that asked about what has been the "most important change" toward improvement during the past three or four years. Some 85.1% said the use of fertilizer accounted for most of these gains. No other factor came even close to competing with fertilizer for top honors in answering this question.

Salesman Described

Salesmen are the fellows who keep the wheels of industry turning. What kind of a fellow is the salesman? Here is a description we picked up the other day and want to pass it on to you:

"A salesman must be a man of vision and ambition, a speaker, a guzzler and a teetotaler—able to work all day, drive all night and appear fresh the next day. He must be able to entertain customers, wives, and sweethearts; must drive through snow at ten below and work all summer without acquiring B.O.

"He must be a man's man, a model husband, a good father, a good provider, a Democrat and a good Republican, technician, politician, mathematician, sales promotion expert, credit manager, correspondent, attend all dealer meetings, tournaments, funerals, visit customers in hospitals and jails. Contact all accounts every two or three weeks and in his spare time look for new accounts.

"He must have a good car, attractive home, belong to all clubs. He must be an expert driver, talker, liar, dancer, bridge player, poker hound, golfer, diplomat, financier, capitalist and authority on psychology, dogs, horses, blondes and redheads.

"He must be a good judge of human nature, know when to stop talking and reach for the order blank and leave the buyer happy in the thought that he got a bargain.

"Beyond that—a salesman is just an ordinary man."

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Croplife

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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

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MEETING MEMOS

Jan. 29—First annual Arizona State Fertilizer Conference, Student Union Bldg., University of Arizona, Tucson.

Feb. 3—Wisconsin Pacemakers Corn Club and Lime and Fertilizer Dealers Meeting, Memorial Union Theater, University of Wisconsin, Madison, Wis.

Feb. 11-12—Third annual Montana Fertilizer Dealer School, Montana State College, Bozeman.

May 22-23—Soil Science Society of North Carolina, First Annual Meeting, Williams Hall, North Carolina State College, Raleigh, N.C.

Oct. 28-29—Northwest Garden Supply Trade Show, Masonic Temple, Portland, Ore.

Oct. 29-31—National Agricultural Chemicals Assn., 25th annual meeting, Bon Air Hotel, Augusta, Ga.

EDITOR'S NOTE: The listings above are appearing in the Meeting Memos for the first time this week.

Jan. 27-31—Seventh Annual Oregon Chemical Applicators Short Course, Withycombe Hall, Oregon State College, Corvallis, Ore.

Jan. 30-31—Colorado Agricultural Chemicals Assn., Annual Meeting, Cosmopolitan Hotel, Denver.

Feb. 2-4—New York Garden Supply Show, New York Coliseum, New York City.

Feb. 4-5—Kansas Insect & Weed Control Conference, Williams Auditorium, Kansas State College, Manhattan, Kansas.

Feb. 4-6—North Carolina Pest Control Operators' Short Course, College Union, Raleigh, N.C. Clyde F. Smith, Dept. of Entomology, N.C. State College, secretary.

Feb. 6-7—New Mexico Pesticide Conference, New Mexico A&M College, Las Cruces, Dr. J. Gordon Watts, Chairman.

Feb. 10-11 — Southwestern Branch, Entomological Society of America, annual meeting, Shamrock Hilton Hotel, Houston, Texas.

Feb. 12-13—Shell Chemical Corp. Nematology Workshop, Hotel Stardust, Yuma, Ariz.

Feb. 13-14—Agronomists-Industry Joint Meeting, Edgewater Beach Hotel, Chicago, sponsored by the Middle West Soil Improvement Committee, Z. H. Beers, 228 N. LaSalle St., Chicago 1, Ill., Executive Secretary.

Feb. 19-20—Midwestern Chapter, National Shade Tree Conference, 13th Annual Meeting, LaSalle Hotel, Chicago, Noel B. Wysong, 536 N. Harlem Ave., River Forest, Ill., Secretary.

Feb. 20-21—Shell Chemical Corp. Nematology Workshop, Holiday Inn Motel, Toledo, Ohio.

Feb. 20-22—Nitrogen Conference, University of Minnesota, St. Paul. M. W. Mawhinney, Smith-Douglass Co., Albert Lea, Minn., Chairman.

Feb. 25-26—Seventh Annual South Carolina Pesticide Chemicals School, Clemson House, Clemson College.

Feb. 26-27—Seventh Annual Ohio-Indiana Agricultural Aviation Conference, Ohio State University, Columbus, Ohio.

March 4-5—Western Cotton Production Conference, Hotel Cortez, El Paso, Texas, Conference Sponsored by the National Cotton Council and the Five State Cotton Growers Assn.

March 13-14—Oregon Feed & Seed Dealers Assn., Annual Convention, Multnomah Hotel, Portland, Ore.

April 13-15—Sixth Annual California Fertilizer Conference, California State Polytechnic College, San Luis Obispo, Sidney H. Bierly, 475 Huntington Drive, San Marino 9, Cal., General Manager.

April 17-19—California Hay, Grain & Feed Dealers Assn., Annual Convention, Ambassador Hotel, Los Angeles.

March 18-19—South Dakota Weed & Pest Control Conference, City Auditorium, Miller, S.D.

April 22 — Western Agricultural Chemicals Assn., Spring Meeting, Hotel Biltmore, Los Angeles; C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., executive secretary.

June 9-11—Association of Southern Feed & Fertilizer Control Officials, Heart of Atlanta Motel, Atlanta, Ga., Bruce Poundstone, University of Kentucky, Lexington, Ky., Secretary-Treasurer.

June 15-18—National Plant Food Institute, Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 25-27—Pacific Branch, Entomological Society of America, San Diego, Cal.

July 8-10—Pacific Northwest Plant Food Assn., Ninth Annual Regional Fertilizer Conference, Pocatello, Idaho.

July 18-19—Southwest Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

Oct. 22-24—Pacific Northwest Plant Food Assn., Annual Meeting, Gearhart, Ore., Leon S. Jackson, P.O. Box 4623, Sellwood-Moreland Station, Portland, Ore., secretary.

NURSERY SOLD

CAMPBELL, CAL.—The James Nursery, 605 South San Jose, Los Gatos Road, has been purchased by Verne and Murrell W. Pickford, retailers of chemicals for garden use. James Nursery was previously owned by Vernon R. and Dorothy B. James.

Basin Farmers Show Little Interest in Peanuts

OTHELLO, WASH. — Peanuts, boomed as a new "super" crop for Washington state's sprawling Columbia Basin irrigation project last year, probably won't cover many acres this year.

A private promotion firm talked 142 basin farmers into planting one-acre plots last year. No applications for the one-acre allotments have been filed so far this year, according to the Othello Agricultural Stabilization and Conservation office.

The peanuts' above ground foliage looked good last year but very few of the goobers matured below the ground. The peanut project never did receive the endorsement of any government agency. Washington State College agronomists said summer nights are not warm enough in this area for the peanuts to mature.

New Mexico Plant Pathologist Resigns

STATE COLLEGE, N.M.—Dr. John E. Chilton, assistant plant pathologist with the New Mexico A&M Experiment Station, has resigned, effective Jan. 31, to accept a position with an agricultural chemical concern in Phoenix. Dr. Chilton, who has been with the A&M Experiment Station for the past six years, in his new position will serve as technical adviser to fieldmen for Arizona Fertilizer, Inc., in Arizona and Mexico.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $11 per column inch.

All Want Ads cash with order.

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WANTED—MAN FOR FERTILIZER SALES work in central western Minnesota. Address Ad No. 3433, Croplife, Minneapolis 1, Minn.

MACHINERY FOR SALE

NH_3 APPLICATORS AND RELATED equipment, used and new. We will sell all or part at your offering price. O'Connor Gas Corporation, Fond du Lac, Wis.

North Carolina Tonnage

RALEIGH, N.C.—Fertilizer sales in North Carolina during November totaled 25,323 tons, compared with 43,644 tons in November, 1956, according to the State Department of Agriculture. Shipments for the first five months (July-November) of this fiscal year amounted to 168,259 tons, compared with 172,909 tons in a comparable period a year earlier.

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TAMPA FLORIDA
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CALENDAR FOR 1958

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3	4	5	6	7	8	9
10	11	12	13	14	15	16
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24	25	26	27	28	29	30
31						

SEPTEMBER

S	M	T	W	T	F	S
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14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

OCTOBER

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			1	2	3	4
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26	27	28	29	30	31	

NOVEMBER

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DECEMBER

S	M	T	W	T	F	S
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NEW

Hi-D® and only Hi-D

gives you all of these 8 big benefits

When you choose an economical source of supplemental nitrogen, be sure to look into the important combination of advantages supplied only by Hi-D. Made by an exclusive process, new Hi-D represents the latest development in nitrogen fertilizer. You get these 8 big benefits from Hi-D — *and only from Hi-D.*

1. Super Dryness.

Hi-D is made by a patented process developed by Commercial Solvents Corporation. This entirely new manufacturing method removes all the moisture from Hi-D *before* the granules are formed.

2. High Density.

Because of this new process, each Hi-D granule is of extremely high density. These hard, non-porous granules lock out moisture, even under humid field conditions. Hi-D is *made dry* — and *stays dry.*

3. Special-Shape Granules.

Note the magnified granule. The unique shape and size are controlled so that distribution is even and accurate in all spreading operations. And Hi-D granules stay put on the ground.

4. Free Flow.

Hi-D flows freely even on hot, sticky days. Because of its super dryness, high density, and special shape, Hi-D doesn't gum-up, doesn't stick, clog, cake or bridge.

5. Two Key Kinds of Nitrogen.

You get *nitrate* nitrogen and *ammonia* nitrogen. One bag of Hi-D supplies as much nitrogen as 1½ bags of ammonium sulphate or 2 bags of sodium nitrate, yet costs less per unit of nitrogen.

6. Two-Speed Fertilizer Action.

Hi-D supplies a total of 33.5% nitrogen in two equal "servings." 16.75% is *nitrate* nitrogen to get crops off to a fast vigorous start. And 16.75% is *ammonia* nitrogen to provide crops with a supplemental boost during the growing season.

7. Up to 25% More Nitrogen in the Hopper.

Because Hi-D has less bulk than any other type of ammonium nitrate, you can get up to 25% more nitrogen in a normal hopper load—cover more ground per load. Hi-D saves storage space, too.

8. Guaranteed to Store a Full Year.

Made dry. Delivered dry. *And stays dry.* So much so that Hi-D is *guaranteed* to store well, under normal conditions, for one full year.

Try Hi-D this year. Get all the advantages of the most up-to-date ammonium nitrate you can buy. See if you don't find it better than anything else you ever used. Remember, of course, that sound management calls first for soil testing, a liming program if needed, the mixed fertilizer your dealer recommends—and then the high-yield, pay-off boost of Hi-D. Call your dealer and order yours today!

Nitrogen the Heart of the Harvest!

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